

Inside Dope
By GEORGE F. TAUBENECK

Learn to live and laugh —
thus delay your epitaph

Stories of the Week
Gags of the Week
Born Too Soon
Perk Up, Baldies!
Hollywood Publicity Hoax
Gold Broom Works for Drayer-Hanson
Logic, Yet, In Mechanical Brains

Stories of the Week

Neighbor Jones looked out his window and saw neighbor Smith sprinkling white powder all over his lawn.

"What's that stuff?" Jones hallooed.

"Elephant repellent."

"You crazy or something? No elephants within miles of here."

"Right. This stuff works real good, hey?"

Widow stopped in at the mortuary to view her embalmed husband, and was annoyed to find him attired in a brown suit, instead of the blue she had chosen.

"Come back in an hour," advised the mortician. She did, and was happy to see a blue suit on her late lamented.

"That must have been a lot of trouble changing all those clothes," she appreciated.

"No, madame, we just changed heads!"

During the great Texas drouth, when drinking water was sold in cartons, a Detroitier had a brainstorm. In a letter to the Editor of the *Free Press*, he recommended:

"Build a pipe line from the Great Lakes to Texas. Operating costs should be low, if Texans can suck as hard as they blow."

Gags of the Week

When you think of how difficult it is to keep up with the Joneses, pause for a moment to pity old man Jones.

About the time you struggle up even with the Joneses, they refinance!

A much decorated RAF pilot, although possessed of well recognized courage as a fighter, was afflicted with an obnoxious personality. When he was transferred to another post, his new commander received this report:

"Splendid officer at 6,000 ft. Should never come any lower."

—*United Mine Workers Journal*.

The National Press Club gave this billing to a recent speaker:

"Dr. Paul Dudley White, The

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Sees 'Comfort Engineering' as Key to Central Cooling Market

By C. Dale Mericle

CLEVELAND—"Comfort engineering," which involves "maximum practical use of insulation," external shading of sunny windows, and attic ventilation, "may be the long-missing key to the potentially tremendous market for central air conditioning systems for the average home," believes Tyler S. Rogers.

In a talk before the second technical conference of the National Warm Air Heating & Air Conditioning Association here, Rogers, technical consultant to Owens-Corning Fiberglas Corp., declared that "comfort

and simplify application problems. These, plus other advantages claimed for "comfort engineering," would boost sales of resi-

(Concluded on Page 44, Col. 1)

Tests Show Monthly Heating-Cooling Costs of \$10.64

TOLEDO — Owens-Corning Fiberglas Corp. has reached the halfway point in a nationwide test program in which it seeks to determine the average monthly heating and air conditioning costs of the typical home when properly designed and adequately insulated.

The company announced it has compiled preliminary figures on 120 of the 172 houses entered in the program and these statistics indicate an average cost of heating and cooling of \$10.64 monthly.

Owens-Corning began its Low Cost Comfort Program to determine the correctness of a statement made by Robert Thulman, former engineer of the

(Concluded on Page 43, Col. 1)

Trane Will Build \$2 Million Factory In Clarksville, Tenn.

LA CROSSE, Wis. — The Trane Co. announced that it has selected Clarksville, Tenn. as the site for its southern plant. Official notification of the decision came following action by the board of directors approving the site location.

Plans are to move forward with the plant at Clarksville "as soon as possible." The plant, to cost about \$2 million to construct and equip for production, will manufacture central residential air conditioners for year-round heating and cooling, marking entry into a new segment of air conditioning for Trane.

Production is scheduled for 1958.

In making the announcement of the plant site selection, Trane President D. C. Minard said: "Many factors influenced our decision. Foremost among them were central location,

(Concluded on Page 6, Col. 1)

Pedals Hard for Cooling Course

CHICAGO—An Arab is on his way here at the rate of 30 miles a day to take an air conditioning and refrigeration course.

Nadhim Mohammed Bashka, 27, arrived in this country by boat from his native Baghdad, Iraq. He is traveling by bicycle to Chicago. He said he had pedaled his way across Jordan, Syria, and Lebanon before taking the steamer.

21 Mfrs. Now Rate Room Units By Its Standard, ARI Reports

Emde Elected ARI President

HOT SPRINGS, Va. — Lud Emde, president of Temprite Products Corp., was elected president of the Air-Conditioning & Refrigeration Institute at the annual meeting of ARI's board of directors here last week.

He succeeds M. M. Lawler, vice president of Worthington Corp.

Emde has been vice president of ARI for the past year. Elected to succeed him in the vice presidency was Don V. Petrone, president of Typhoon Air Conditioning Co., a division of Hupp Corp. Rudy Berg, vice president of Copeland Refrigeration Corp., was elected ARI's treasurer.

The three newly-elected officers

(Concluded on Page 6, Col. 5)

Laboratory Approved for Testing B.t.u. Ratings 'If It Is Necessary'

HOT SPRINGS, Va.—Twenty-one manufacturers of room air conditioners have made public the capacity ratings of their units in terms of B.t.u. per hour in accordance with the ARI standard, officials of the Air-Conditioning & Refrigeration Institute announced at the institute's annual meeting here.

The ARI standard 110-56 was drawn up last year in a move to provide the public with a reliable "yardstick" by which to measure capacity. At the inauguration of the program last September, 22 manufacturers, who produce about 90% of the units sold in this country, agreed to participate in the rating program.

George S. Jones, Jr., managing director of ARI, announced at the meeting that the institute's room air conditioner section has approved designation of Electrical Testing Laboratories in New York City as an agency for checking rating, if it becomes necessary.

Others may be approved later if a need for more laboratories arises, he indicated.

Jones emphasized that no manufacturer's ratings have yet been formally challenged. Only challenges accompanied by substantial supporting evidence will be considered as justifying a check by an independent laboratory, he said.

It was indicated at the meeting that at least one other manufacturer will issue ratings in accordance with the ARI standard by June 1. Others who have

(Concluded on Page 45, Col. 1)

100 Exhibit At Western 'Selling Show'

LOS ANGELES — Well-presented exhibits, high-grade technical sessions, and attendance which was up to expectations, marked the first Western Air Conditioning, Heating, Ventilating, and Refrigeration Exhibit and Conference, at the Shrine Auditorium here May 4-8.

Products of some 100 or more manufacturers were exhibited in a display area which took up most of the main floor of the Shine Exhibit hall. Principal components for air conditioning, heating, and refrigeration systems dominated the exhibits. There were also some displays

(Concluded on Back Page, Col. 2)

City May Kill Demand Charge

MILWAUKEE—In an action tantamount to recommending killing the proposal, common council's utilities committee here recommended that an ordinance to put a demand charge on "water-wasting" air conditioning systems be "placed on file." The vote was 3 to 2.

However, Mayor Zeidler asked council not to kill the proposed ordinance. If it is not passed, he declared, the anticipated \$53,250,000 investment in expansion of the waterworks would mean money—and water—down the drain.

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Adds 'Simultaneously'

ASHAE Redefines Air Conditioning

NEW YORK CITY—The important word "simultaneously" has been added to the official definition of "air conditioning" adopted by the American Society of Heating & Air-Conditioning Engineers.

The new definition recommended by the society is as follows:

"Air conditioning is the process of treating air so as to control simultaneously its temperature, humidity, cleanliness, and distribution to meet the requirements of the conditioned space."

The council of the society has approved this new definition sponsored by its Standard Committee and President P. B. Gordon of New York City states that it will be "helpful to our profession and to other interested parties and organizations in having a full understanding of the term air conditioning."

Know
where you're
heading . . .
Insist upon
READING!



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for Refrigeration &
Air Conditioning Equipment

Made by Copper Tube SPECIALISTS

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WORKS: READING, PA.

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When you buy a low
temperature system and
check the TOTAL costs of both
the low and high side,
you'll be pleased to find that

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ONLY... THERMOBANK completely protects
the compressor — no liquid refrigerant to the
compressor, no oil foaming, no motor overload.

ONLY... THERMOBANK makes possible the use of the
"Low Temperature" compressor without overloading
during defrost, making possible serious reductions in
first cost as well as significant operating economies.

WRITE FOR MANUAL TV-320

KRAMER TRENTON CO. • Trenton 5, N.J.

43 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Weather Bureau's May Outlook

Sees Above Normal Temperatures In West Half of U.S., Below In Northeast

DETROIT — Temperatures averaging below seasonal normals over the eastern third and above normal in the western half of the nation are indicated in the U. S. Weather Bureau's 30-day outlook for May.

States bordering on the Gulf of Mexico are the only ones in the eastern sector expected to have above normal temperatures. The far southwest, it is predicted, will be below normal.

This temperature pattern marks a major reversal from conditions prevailing the last two weeks of April, the bureau noted.

Normal temperatures are expected to prevail in a band extending southeastward from Minnesota through Iowa, east-

ern Missouri, southwest Illinois, the western tip of Kentucky, most of Tennessee, the northeastern tip of Mississippi, upper Alabama, nearly all of Georgia, and part of South Carolina, and a tiny section of Florida.

Another normal-temperature band is expected to curl out of Mexico through west Texas and parts of New Mexico, Colorado, Utah, and Nevada, and southward through part of California.

Much above normal temperatures are seen for the far northwest area centering around Idaho and Montana.

Heavy precipitation is predicted for the far southwest, New York, part of Pennsylvania, New Jersey, and the New England area. It is expected to be subnormal over much of the country, in contrast to the generally wet weather of April. Rains in central and eastern Texas, which have been abnormally heavy, are predicted to taper off to near normal or subnormal values.

The Weather Bureau points out that the 30-day outlook is not a specific forecast in the usual meteorological sense, but is an estimate of the average rainfall and temperature for the next 30 days based on the best indications now available.

ARI Revises Edition on Refrigerant Properties

WASHINGTON, D. C. — A new edition of "Properties of Commonly Used Refrigerants" has been issued by the Air-Conditioning & Refrigeration Institute.

It is available to manufacturers, engineers, colleges and universities, servicemen, and others who may have occasion to use it, according to ARI Managing Director Geo. S. Jones, Jr.

The new book is a revision of a publication issued by the Air Conditioning & Refrigerating Machinery Association, one of ARI's predecessor organizations, in 1948. The 136-page publication sells for \$2, and may be obtained from ARI in Washington.

Consonant with changes in design of equipment and developments in refrigerant chemistry, the book lists four new refrigerants not covered in the 1948 edition, and has dropped one of the compounds previously listed, it was pointed out.

The new listings cover properties of refrigerants 13, 113, 114, and 500. Also listed are refrigerants 11, 12, 22, and 717, which were included in the earlier edition. Methyl chloride, which was covered in the 1948 edition, has been dropped.

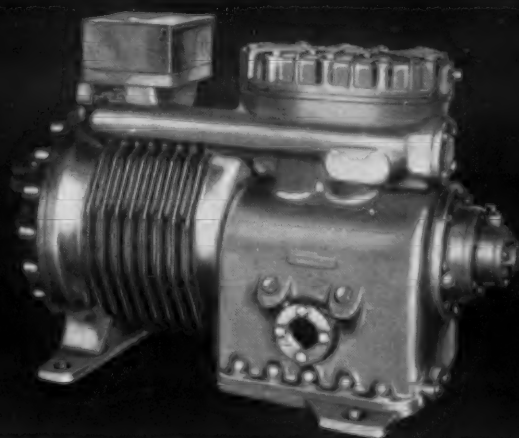
The book was prepared by ARI's technical staff under the direction of the Refrigerants Committee of the Refrigerants, Lubricating Oils, and Chemicals Section of the institute, of which William A. Bours III is chairman.

To Cool Hospital

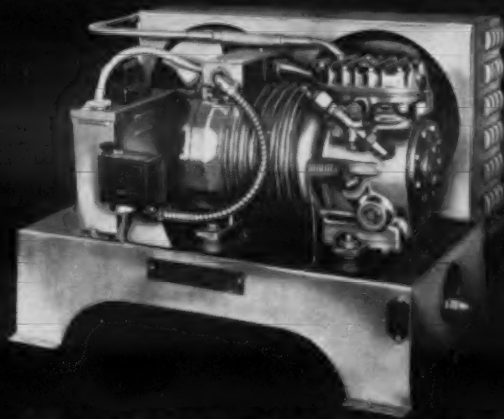
NASHVILLE, Tenn. — The State Building Commission has approved a \$17,000 air conditioning project at the Gailor hospital in Memphis.



SOLD



COPELAMETIC MOTOR - COMPRESSORS



COPELAMETIC CONDENSING UNITS



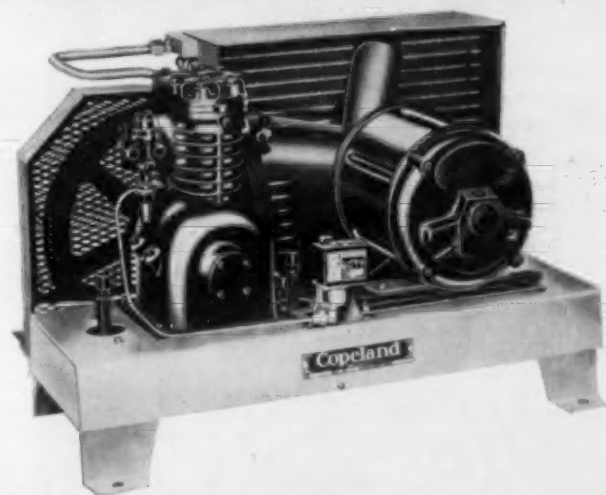
COPELAWELD MOTOR - COMPRESSORS

***Copeland* quality and service keep users sold on your equipment**

Call the roll of America's leading manufacturers of display cases, air conditioners, coolers and related products and you'll find them delighted with their Copeland-powered units. Once they bought Copeland, it has become "*Copeland from here on.*"

High quality of Copeland motor-compressors for air-conditioning and refrigeration products is one important factor. But these manufacturers also like our unequaled distribution system . . . nearly 150 wholesalers from coast to coast providing instant parts and replacement service to users of Copeland equipment. Field sales stocks are currently valued at close to \$4,000,000.

Now, thanks to our new manufacturing plant—most modern in the industry—the whole Copeland family is in improved position to deliver unexcelled quality with speeded-up service.



BELT - DRIVEN CONDENSING UNITS

SINCE 1918

Copeland
REFRIGERATION CORPORATION

Sidney, Ohio





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MOBILE.....Refrigeration Supply Co.
MONTGOMERY.....Nolin-McInnis Company

ARKANSAS
FORT SMITH.....Central Supply Company
LITTLE ROCK...Refrigeration & Electrical Supply Co.

ARIZONA
PHOENIX.....Authorized Supply Company
PHOENIX.....State Equipment & Supply Co., Inc.
CALIFORNIA

BAKERSFIELD.....Refrigeration Supplies Distributor
EL CENTRO.....Allied Refrigeration Suppliers, Inc.
EL CENTRO.....Refrigeration Supplies Distributor
FRESNO.....California Refrigerator Company
FRESNO.....Thermal Products, Inc.
GLENDALE.....Arrow-Risco, Inc.
LONG BEACH...L. B. Marsh Allied Refrigeration Co.
LOS ANGELES.....Arrow-Risco, Inc.
LOS ANGELES.....Refrigeration Supplies Distributor
LOS ANGELES.....Thermal Products, Inc.
N. HOLLYWOOD.....Arrow-Risco, Inc.
OAKLAND.....California Refrigerator Company
OAKLAND.....Wm. Wurzbach Company
RIVERSIDE.....Refrigeration Supplies Distributor
SACRAMENTO...Acme Supply & Equipment Company
SAN BERNARDINO.....L. B. Marsh Allied Refrig. Co.
SAN DIEGO.....Allied Refrigeration Suppliers, Inc.
SAN DIEGO.....Refrigeration Supplies Distributor
SAN FRANCISCO.....California Refrigerator Company
SAN FRANCISCO.....Refrig. & Power Specialties Co.
SAN GABRIEL.....Arrow-Risco, Inc.
STOCKTON...Refrigerating & Power Specialties Co.

COLORADO
DENVER.....Thermo Supply Company

CONNECTICUT
HARTFORD.....N. W. Day Supply Company
HARTFORD.....Joseph Simons Company
NEW HAVEN.....Resco, Inc.

DISTRICT OF COLUMBIA
WASHINGTON.....Refrigeration Supply Co., Inc.

FLORIDA
FT. LAUDERDALE.....Graves Broward Co.
JACKSONVILLE.....Bowen Refrigeration Supplies, Inc.
JACKSONVILLE.....Refrigeration Supply Company
MIAMI.....Bowen Refrigeration Supply, Inc.
MIAMI.....O'Brien Associates
ORLANDO.....R & R Supply Company, Inc.

S
PENSACOLA.....Cooling & Heating Supplies
ST. PETERSBURG.....Graves Bros. Refrig. Supplies
ST. PETERSBURG.....Mote W. Baird & Son
TALLAHASSEE.....Capital Refrigeration Supply, Inc.
TAMPA.....Leo S. Bosarge Co. of Tampa, Inc.
TAMPA.....Noland Company

GEORGIA
ATLANTA.....Leo S. Bosarge Company, Inc.
ATLANTA.....Bowen Refrigeration Supplies, Inc.
COLUMBUS.....Hajoca Corporation
MACON.....Graves Refrigeration, Inc.
SAVANNAH.....Savannah Refrigeration Supply Co.

IDAHO
BOISE.....Commercial Distributing Company

ILLINOIS
CHICAGO.....Service Parts Company
DECATUR.....Potter Supply Company
EAST ST. LOUIS.....Illinois Electric Works, Inc.
PEORIA.....Polar Supply Corporation
ROCKFORD.....Park Distributors, Inc.
SPRINGFIELD.....Spangler, R. H. Company, Inc.

INDIANA
EVANSVILLE.....Budlock Refrigeration Supply Co.
EVANSVILLE.....Ohio Valley Hardware Company, Inc.
INDIANAPOLIS.....Duncan Supply Company
MISHAWAKA.....Valley Equipment Company
RICHMOND.....Gennett & Sons, Inc.
TERRE HAUTE.....Budlock Refrigeration Supply Co.

IOWA
BURLINGTON.....Pioneer Supply Co.
CEDAR RAPIDS.....Thermal Company, Inc.
DES MOINES.....Thermal Company, Inc.
DAVENPORT.....White Refrigeration Supply, Inc.

KANSAS
TOPEKA.....Refrigeration Equipment Company
WICHITA.....Refrigeration Equipment Company

KENTUCKY
LEXINGTON.....Brock-McVey Company
LOUISVILLE.....Mill Industrial Supply, Inc.

LOUISIANA
ALEXANDRIA...The American Supply Company, Inc.
BATON ROUGE.....Acme Refrigeration
LAFAYETTE.....Cooling & Heating Wholesalers
LAKE CHARLES.....Temtrol Supply, Inc.
MONROE.....Thermal Supply
NEW ORLEANS.....Nola Sales Company, Inc.
SHREVEPORT...Standard Brass & Manufacturing Co.

MAINE
PORTLAND.....A. E. Borden Company, Inc.
PORTLAND.....Joseph Simons Company

MARYLAND
BALTIMORE.....Roche & Hull, Inc.
SALISBURY.....Roche & Hull, Inc.

MASSACHUSETTS
BOSTON.....A. E. Borden Company, Inc.
SPRINGFIELD.....C. P. Payson Company, Inc.

MICHIGAN
ALPENA.....J. Geo. Fischer & Sons, Inc.
DETROIT.....J. Geo. Fischer & Sons, Inc.
DETROIT.....Young Supply Company
GRAND RAPIDS.....Harris Supply Company
JACKSON.....J. Geo. Fischer & Sons, Inc.
KALAMAZOO.....Harris Supply Company
LANSING.....Harris Supply Company
PONTIAC.....Young Supply Company
SAGINAW.....J. Geo. Fischer & Sons, Inc.

MINNESOTA
MINNEAPOLIS.....Thermal Company, Inc.
ST. PAUL.....Thermal Company, Inc.

MISSISSIPPI
JACKSON.....Paine Supply Company
MERIDIAN.....Motor Supply Company, Inc.
TUPELO.....Paine Supply Corp.

MISSOURI
KANSAS CITY...Refrigeration Equipment Company
ST. LOUIS.....Mechanical Supply Company
ST. LOUIS.....R. H. Spangler & Company, Inc.
SPRINGFIELD.....John A. Rhodes Company

NEBRASKA
LINCOLN.....Wickham Supply Company, Inc.
OMAHA.....White Refrigeration Supply, Inc.

NEVADA
LAS VEGAS.....L. B. Marsh Allied Refrigeration
LAS VEGAS.....Refrigeration Supplies Distributor
RENO.....Acme Supply Co., Inc.

NEW JERSEY
AVON-BY-THE-SEA.....Wallwork Brothers, Inc.
NEWARK.....Tesco Distributors
NEWARK.....Wallwork Brothers, Inc.
NEW BRUNSWICK.....Tesco Distributors
OCEAN GROVE.....Tesco Distributors
TRENTON.....Jaegers Sales & Service

NEW MEXICO
ALBUQUERQUE.....Airco Supply Company

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AND REFRIGERATION CONDENSING UNITS OR PARTS

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SINCE 1906

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Brunnerize for dependable refrigeration and air conditioning distribution service.

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ALBANY.....W. A. Case & Son Mfg. Co.
BINGHAMTON.....W. A. Case & Son Mfg. Co.
BROOKLYN.....Excel Refrigeration Supplies, Inc.
BUFFALO.....W. A. Case & Son Manufacturing Co.
BUFFALO.....Jordan Supply Company
ELMIRA.....Brady Supply Company
MOUNT VERNON.....Eastern Supply Company
NEWBURGH.....W. A. Case & Son Mfg. Co.
NEW YORK.....Aetna Supply Company
NEW YORK.....Albert Hofeld, Inc.
NEW YORK.....Reese & Long Refrig. Products, Inc.
NEW YORK.....Paramount Electric Supply Company
PLATTSBURGH.....W. A. Case & Son Mfg. Co.
ROCHESTER.....Ontario Metal Supply, Inc.
SYRACUSE.....Empire Refrigeration Supply Co., Inc.
SYRACUSE.....W. A. Case & Son Manufacturing Co.
UTICA.....Vaeth Electric Company

NORTH CAROLINA

ASHEVILLE.....Hajoca Corporation
CHARLOTTE.....Bowen Refrigeration Supplies
CHARLOTTE.....Henry V. Dick & Company
DURHAM.....Hasco, Inc.
GREENSBORO.....Hasco, Inc.
RALEIGH.....Noland Company, Inc.
RALEIGH.....Henry V. Dick & Company, Inc.
WILMINGTON.....Henry V. Dick & Co.
WILSON.....Noland Company, Inc.
WINSTON-SALEM.....Hasco, Inc.

OHIO

AKRON.....Davey Sales Company
CINCINNATI.....Mason Supply Company
CINCINNATI.....Mutual Manufacturing & Supply Co.
CLEVELAND.....Cleveland Hermetic & Supply Co., Inc.
COLUMBUS.....Mason Supply Company
DAYTON.....A. & H. Supply Co.

OKLAHOMA

OKLAHOMA CITY.....Jones-Newby Supply Company
OKLAHOMA CITY.....M & V Supply Company
TULSA.....Jones-Newby Supply Company

OREGON

PORTLAND.....Refrigerating & Power Specialties

PENNSYLVANIA

ALLENTOWN.....Larson Supply Company
ERIE.....W. A. Case & Son Manufacturing Company
ERIE.....Erie Refrigeration Supplies
HARRISBURG.....Resco, Inc.
PHILADELPHIA.....Acar Supply Company
PITTSBURGH.....Orr, Inc.
PITTSBURGH.....Proie Brothers, Inc.
READING.....Larson Supply Company
SCRANTON.....Central Service Supply Company
WILKES-BARRE.....Radio Service Company

RHODE ISLAND

PROVIDENCE.....A. E. Borden Company, Inc.
PROVIDENCE.....Rhode Island Refrigeration Supply Co.

SOUTH CAROLINA

COLUMBIA.....Henry V. Dick & Company
GREENVILLE.....Henry V. Dick & Company

SOUTH DAKOTA

SIOUX FALLS.....Thermal Company, Inc.

TENNESSEE

CHATTANOOGA.....Peglar's, Inc.
KNOXVILLE.....Knoxville Refrigeration Supply Co.
KNOXVILLE.....Leinart Engineering Co.
MEMPHIS.....Budlock Refrigeration Supply Co., Inc.
MEMPHIS.....R. H. Spangler Company, Inc.
NASHVILLE.....J. B. Thomas Company

TEXAS

ABILENE.....C & H Distributing Company
CORPUS CHRISTI.....S. Texas Refrig. Supply Company
DALLAS.....Barbeck Refrig. Supply Company, Inc.
DALLAS.....Central Engineering & Supply Company
EL PASO.....M & M Refrigeration & Electrical Supply
FORT WORTH.....Texas Refrigeration Supply Co.
HARLINGEN.....United Supply Company
HOUSTON.....Johnson Supply Company
HOUSTON.....Lingo Company, Inc.
HOUSTON.....Standard Brass & Manufacturing Co.
LUBBOCK.....R & R Refrigeration Corporation
SAN ANGELO.....Central Electric Company
SAN ANTONIO.....United Supply Company
SAN ANTONIO.....Westbrook Company
TYLER.....Amstan Supply Division
WACO.....Texas Refrigeration Supply Company

UTAH

SALT LAKE CITY.....Commercial Dist. Company

VERMONT

BURLINGTON.....The Blodgett Supply Company, Inc.

VIRGINIA

BRISTOL.....Southern Refrigeration Corporation
NEWPORT NEWS.....Noland Company, Inc.
NORFOLK.....Noland Company, Inc.
NORFOLK.....Refrigeration Suppliers, Inc.
ROANOKE.....Southern Refrigeration Corporation

WASHINGTON

SEATTLE.....Refrigerating & Power Specialties Co.
SPOKANE.....Wakefield Supply Company
TACOMA.....Refrigerating & Power Specialties Co.

WEST VIRGINIA

CHARLESTON.....Mason Supply Company
HUNTINGTON.....Mechanical Refrigeration Supply Co.
WHEELING.....Mason Supply Company

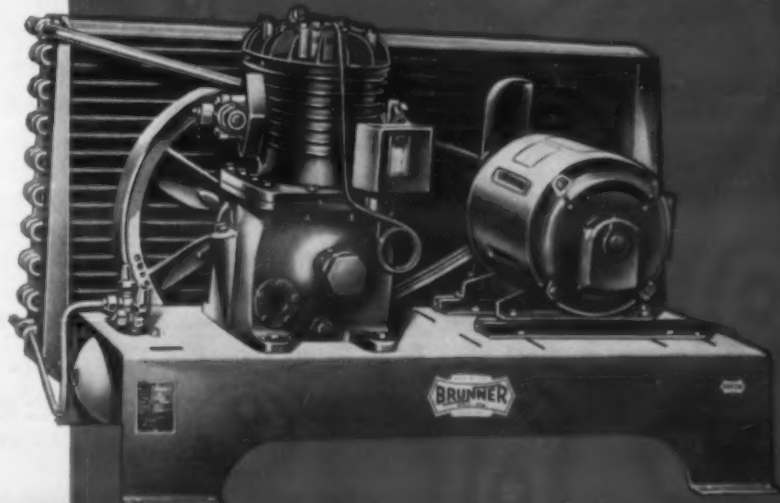
WISCONSIN

MADISON.....B. T. U. Equipment & Supply Corp.
MILWAUKEE.....Thermal Company, Inc.



Brunner-Metic semi-hermetic condensing units for every commercial refrigeration application... from 1/4 H.P. through 3 H.P.

A complete line of Open-Type Condensing Units... full range of types and sizes... from 1/4 H.P. through 100 H.P. Brunner makes it easy to choose the right unit for every refrigeration and air conditioning job.



Trane To Build Southern Plant--

(Concluded from Page 1)
nearness to major markets and population centers, reduced shipping costs, and availability of labor and raw materials."

The first unit of the plant in Clarksville, to be built on 101 acres of land about four miles northeast of the city, will encompass about 130,000 sq. ft.

Minard said employment in this plant "will commence at a relatively low level. The plant, operating at capacity, should provide employment for approximately 300 people. It is our hope that the products built there will be successful and that such employment levels can be reached in a few years, he added.

"Present plans call for the Clarksville plant to manufacture residential air conditioning units," he pointed out. "Depending on the success of this op-

eration, there is the possibility that other related products serving related markets may be added later."

Up to this time, Trane has concentrated on the production of engineered-type air conditioning units for larger applications such as hotels, factories, offices, theaters, and other big buildings.

"There will be no let-up in our efforts in these fields," Minard assured.

Trane, manufacturing engineers of air conditioning, heating, ventilating, and special heat transfer equipment, has its headquarters and main manufacturing facilities in La Crosse, with plants in Scranton, Pa. and Toronto, Ont., Can. It has 93 sales offices in the United States and 19 in Canada. Sales for 1956 totaled \$74,500,000, it was explained.

Dunham-Bush Names District Sales Mgr., District Chief, 13 Sales Engineers

WEST HARTFORD, Conn.—Dunham-Bush, Inc., manufacturer of air conditioning, refrigeration, and heating products, has announced appointment of a Chicago district sales manager, a northwest district manager, and 13 new sales engineers to represent the firm.

George A. Mansinger has been named district sales manager in charge of heating sales in the Chicago area. Mansinger was sales engineer in the company's Detroit office and also was associated with Goodloe E. Moore Co.

Jerry Wilcox is the new D-B sales engineer in the Salt Lake City area. He was formerly district manager for Walter B. Lloyd Co. there.

Jerry Howarth has been appointed sales engineer in north-

ern California and western Nevada. Howarth was previously associated with York Corp.

Maxwell G. Finke will operate in Chicago as a sales engineer. He moves from another sales position with Dunham-Bush.

Clifford Masek was named sales engineer in Milwaukee. He formerly was representative for American Lightning Rod Co. and James K. Horne, Inc.

R. W. Bonin is new sales engineer in Indianapolis. He previously was field engineer with Bonin Engineering Co.

Al Rockafellow will cover the Philadelphia area as sales engineer. He formerly was associated with Elliot Lewis Corp. and York Corp.

Peter Catalina will operate as sales engineer in Baltimore. He

moves to D-B from Taze and Hewitt of that city.

Robert K. Huber has been named sales engineer in Maryland and Delaware. He previously was associated with American Radiator as heating and cooling specialist.

Edward C. Blood will cover Kansas and southwestern Missouri as sales engineer. He formerly was York Contracting, General Electric Contracting, and Westinghouse Contracting.

Jack Bower is new sales engineer in the Los Angeles territory. He was formerly associated with Lynch Corp., Toledo, and Refrigeration Supplies Distributors, Los Angeles.

M. J. Phillipson will cover British Columbia and southwestern Canada for the firm as sales engineer. He has been sales representative with Refrigerative Supply, Ltd.

Keith E. Schneider, formerly an engineer with General Electric Co., has been named sales engineer in Dallas. He was vice president and manager of Ark-La-Tex Engineering Co.

Carl Willhoft has been appointed northwest district manager for northern California, Idaho, western Montana, Nevada, Oregon, Utah, Washington, and western Canada, with offices in The Phelan Bldg., San Francisco. He and his staff will also represent Heat-X, Inc., a wholly-owned D-B subsidiary.

Dave Dufur will be sales engineer in Portland, Ore.

Emde Named--

(Concluded from Page 1)

cers, together with Lawler, as immediate past-president, and ARI Managing Director Geo. S. Jones, Jr., will make up the executive committee for 1957-58.

Eight newly-elected members of ARI's board of directors took office at the meeting. They are:

E. W. Ervasti, general sales manager, Calumet & Hecla of Canada, Ltd.; Russell Gray, vice president and general manager of Carrier Corp.'s Unitary Equipment Div.; H. F. Hildreth, manager, refrigeration specialties, Westinghouse Electric Corp.; L. N. Hunter, senior vice president of National-U. S. Radiator Corp.; B. E. James, executive vice president of McQuay, Inc.; F. E. Lehman, general manager of Frigidaire Div., General Motors Corp.; J. W. Norris, president, Lennox Industries, Inc.; and Petrone.

Members of the board who continue in office include W. A. Bours, E. I. du Pont de Nemours & Co., Inc.; C. V. Gary, Henry Valve Co.; Jones; Charles T. Lawson, American Motors Corp.; R. H. Luscombe, Penn Controls, Inc.; Delmar Moerick, Controls Corp. of America; R. J. Powell, The Marley Co.; Austin Rising, York Div., Borg-Warner Corp.; and Lawler.

...whether you need
2 CIRCUITS or 2 DOZEN!



Buy
SPORLAN REFRIGERANT DISTRIBUTORS for Peak Performance
regardless of Load or Evaporator Temperatures!

Because Only Sporlan with its Famous Interchangeable Nozzle can offer you ALL THESE IMPORTANT ADVANTAGES

It is perfectly adaptable to all refrigerants. The nozzle is removeable for visual, air, or test wire inspection of each individual circuit at both the distributor and coil connection. The nozzle selection can be made at the factory or on the job. The coil manufacturer can stock coils with the distributor already attached and select the proper nozzle later for the conditions specified. The capacity can readily be varied on the job if the application changes or conditions are not as expected.

So... If you are a packaged unit or coil manufacturer, contractor or service engineer... The Sporlan Refrigerant Distributor, with over 15 years of Peak Performance Leadership, is the one for you!
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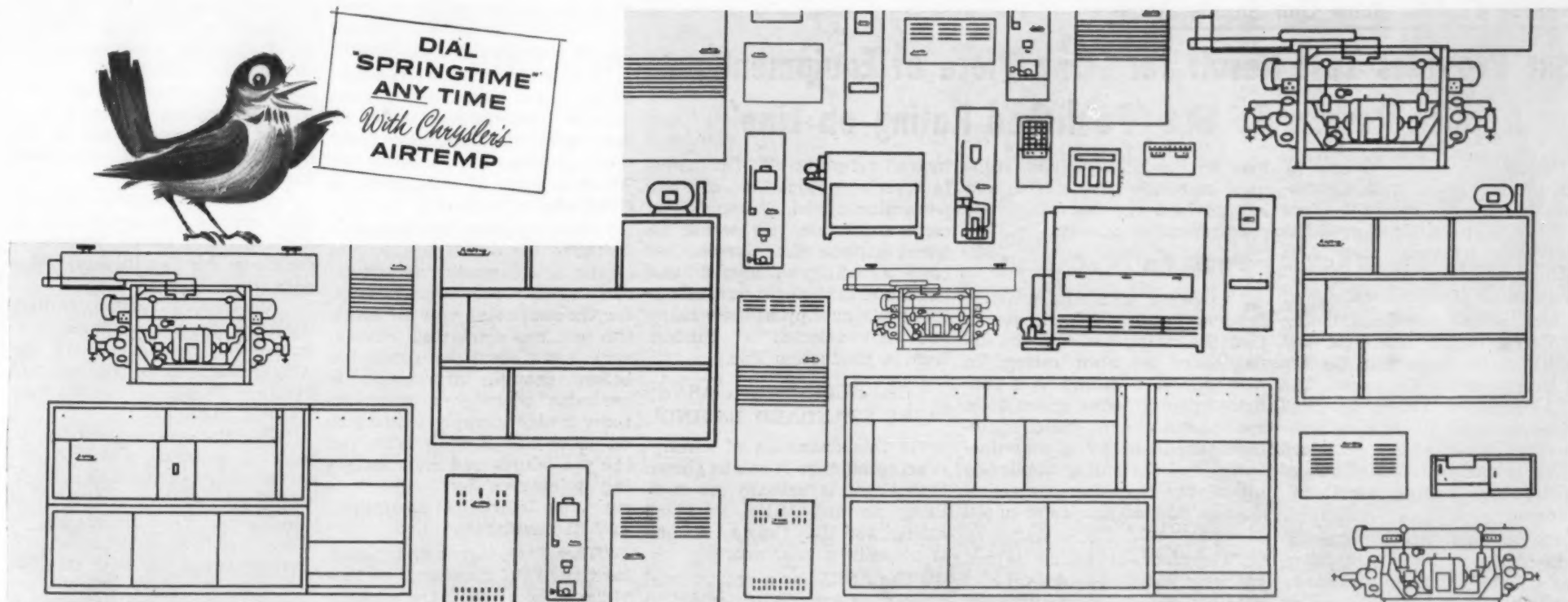


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ANY TIME
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AIR CONDITION

any HOME - any BUILDING, big or small -
with **CHRYSLER'S 287 AIRTEMP** models

With an Airtemp franchise you are able to meet any air conditioning need for any customer.

Airtemp's 287 models include "packaged" and remote central air conditioners for homes—both are waterless and water-cooled.

The complete line of Airtemp room air conditioners includes the original casement window model, a full selection for conventional windows and the wall-thin Imperial.

For business and industry there are packaged air conditioners up to 75-tons, and packaged water chillers up to 125-ton capacity.

The latest addition to the Airtemp family is a car air conditioner. Now Airtemp dealers can get their share of this vast, growing market.

All are Chrysler-engineered for easy installation and dependable, low-cost operation.



In May **88,081,000** people
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Bergheim Explains Room Unit Standards

ASRE Provides Test Result for 'One Piece of Equipment'; ARI Applies Results To Get 'Published Rating on Line'

DETROIT—Some readers of AIR CONDITIONING & REFRIGERATION NEWS have recently asked if there is an explanation of the difference between the "ARI rating" and the "ASRE rating" on room air conditioners.

ARI is the Air-Conditioning & Refrigeration Institute, and ASRE is the American Society of Refrigerating Engineers. The ARI Standard 110-56 is titled "Standards for Room Air Conditioners." The ASRE Standard 16-56 is the ASRE Methods of Rating and Testing Air Conditioners.

For an authoritative explanation of the purposes and differences between these standards, the News turned the question

over to Joe H. Bergheim, technical secretary of the ARI, and he provided the following very comprehensive answer:

PROBLEM IS ACADEMIC

"To begin with, the problem is somewhat an academic one, in that the rating lies with the definition of the word 'rating.' In our opinion, a 'rating' is a publish capacity value given to a specific model and type of equipment produced by a manufacturer, and the rating applies to all of the manufacturer's production of that particular model of equipment.

"Therefore, a rating is not properly used to describe a single piece of equipment, but

instead refers to all of a manufacturer's production of one particular model. The only exception to this rule would be where a piece of equipment has been especially designed and built, and is the only unit manufactured, as opposed to being one unit selected at random from a production line.

'NO SUCH THING AS ASRE STANDARD RATING'

"If this definition of 'rating' is accepted, then it can be shown that there is actually no such thing as an 'ASRE standard rating' and that the use of such is actually a misnomer.

"The ASRE, as a professional society, is expected to establish

methods, instrumentation, procedures, and conditions for testing various types of equipment.

"ARI feels that its responsibility should be to write recommended standards, including manufacturing tolerances and other commercial aspects by which a piece of equipment is rated and advertised.

"Thus, a piece of equipment tested by the ASRE method and at the ASRE conditions will result in a capacity determination for the particular unit on which the test was conducted. Several such tests must be conducted before enough information is available whereby a manufacturer is able to apply a rating to an entire line of equipment, and the procedures and manufacturing tolerances by which this rating is determined is outlined in ARI standards.

"Therefore, if you can visualize the ASRE standards as providing a test result for a single

piece of equipment, and the ARI standards as providing a method of applying these results to obtain the published rating, then it is apparent that any published rating referring to a line of equipment should be designated an 'ARI Standard Rating.'

"As a specific example of this, refer first of Paragraph 4.20 of ARI Standard 110-56, Standards for Room Air Conditioners. This paragraph states:

"Cooling capacity ratings shall be based on tests conducted in accordance with the ASRE Methods of Rating and Testing Air Conditioners (ASRE 16-56)."

"The Paragraph goes on to state those items which should be included in published ratings, and briefly states the ASRE test conditions. Then referring to Paragraph 4.10 of the same ARI Standard, you will note that the following statement appears:

"To comply with this standard, published or reported room air conditioner ratings . . . shall be based on data obtained in accordance with the provisions of this section and shall be such that the performance of any production unit will not deviate more than plus-or-minus 8% from said ratings."

"To comply with the ARI Standard, a manufacturer would undoubtedly test several production units of a particular model of room air conditioner before attempting to select a rating.

"Before publishing a rating, however, the manufacturer would want to compare the results of these various tests, consider the quality control limits in his plant, and perhaps compare other manufacturing and production tolerances, after which he would be able to establish a rating such that any production unit coming off his production line would fall within the rating tolerances outlined in Paragraph 4.10 of ARI Standard 110-56.

PERFORMANCE REQUIREMENTS

"Another item confused in a discussion of ratings exists in connection with the various performance requirements contained in our Standard 110-56. These performance requirements are the maximum operating conditions tests, the low temperature operation tests, the insulation efficiency tests, and the condensate disposal tests.

"Actually, however, these tests do not establish a rating, but instead are performance tests which indicate that a room air conditioner will perform satisfactorily under extreme conditions. Since a unit either passes or does not pass these tests, a rating cannot be obtained from such tests.

"To summarize, a room air conditioner should actually have only one rating, and that would be the 'ARI Standard Rating' obtained in accordance with our Standard 110-56. The test method used to arrive at these ratings is determined by ASRE.



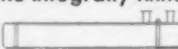



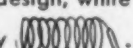





"Performance requirements, on the other hand, are not ratings.

"It is of interest to note that ASRE currently has under consideration a plan whereby the ASRE standards would be entitled 'Methods of Testing for Rating—,' rather than 'Methods of Rating and Testing—.'




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For more information about products advertised on this page use Information Center, page 32.

York Offers Air, Water, Combination Hermetic Condensing Units In 1/3 to 7 1/2 Hp.

YORK, Pa.—To meet the needs of businesses requiring refrigeration, York Corp., subsidiary of Borg-Warner Corp., is offering a complete new line of hermetic condensing units in sizes from 1/3 through 7 1/2 hp. Two refrigerants—12 and 22—and three methods of condenser cooling—air, water, and combination air-water—are available.

"Our 1957 line comprises some 370 models, including changes for current and voltage characteristics," amplified H. M. Haase, York president. Stating that all are precision-engineered, he said, "We are stressing five built-in features:

"(1) Compressor sealed in steel with a lifetime supply of oil and refrigerant.

"(2) 'Centriforce' lubrication—the utilization of centrifugal force to pump super-refined oil to all moving parts through ports in the crankshaft and connecting rods.

"(3) Lightweight aluminum-alloy piston equipped with high tensile strength compression ring.

"(4) Heavy-duty motor with high starting torque.

"(5) No shaft seal required because the entire system is hermetically sealed."

Water-cooled models range in capacity from 1/2 to 7 1/2 hp. and are subdivided into two temperature groups: medium temperature from 40° F. to 0° and very low temperature from 0° to -45°.

"Because water will absorb heat more rapidly and during warm weather is usually at lower temperature than the air surrounding the condensing unit, water cooling is highly efficient," the announcement said. "It is particularly suitable where the condensing unit must be located in a high temperature area."

Copper counterflow tubing is used on all water-cooled condensers. The refrigerant in the outer tube flows counter to the water in the inner tube, providing high heat transfer, according to the company.

To meet water conditions that require periodic cleaning of the condenser, water-cooled models from 1 1/2 through 7 1/2 hp. may

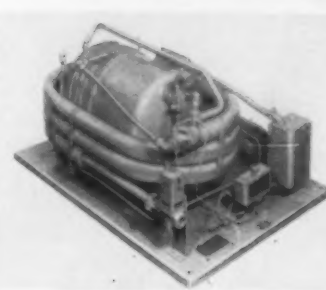
be had with cleanable condensers.

"Where water is scarce or costly, an air-cooled condensing unit will provide economical operation," it was stated. "These are available in sizes from 1/3 hp. to 3 hp. Smaller models have one fan, larger models two fans.

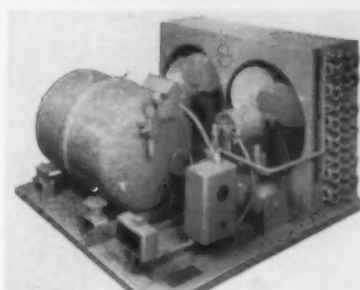
"Combination air-and-water-cooled units will best meet those

conditions where water is scarce or costly and the surrounding atmosphere is at high temperature. Combination units are available in sizes from 1/2 to 3 hp. Water cooling goes into effect automatically when the head pressure reaches a predetermined level.

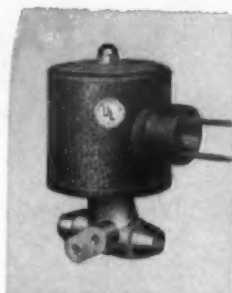
"Gas cooling protects the electric motor and compressor valves from overheating. Very low temperature units have an additional water-cooling coil wrapped around the compressor.



VERY LOW temperature York hermetic condensing unit model C-26209-R1 is available in 1 1/2 to 5-hp. water-cooled units.



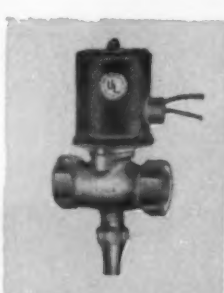
MODEL C-26035-R is available in 1 1/2 through 3-hp. air-cooled units.



Type S120



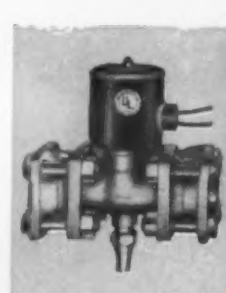
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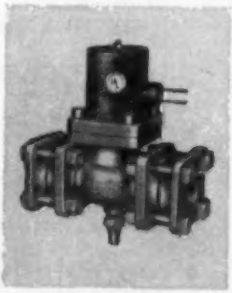
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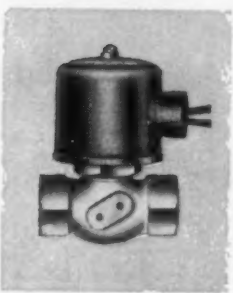
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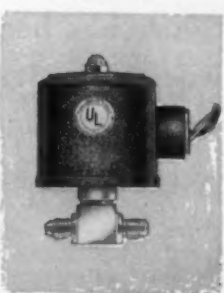
Type R1



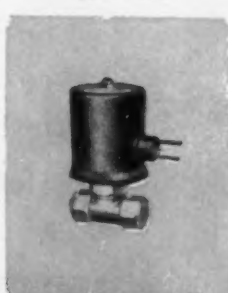
Types R6 and R2



Type S804



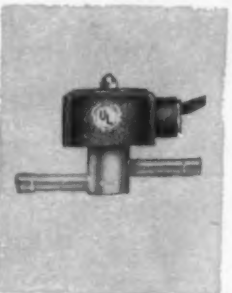
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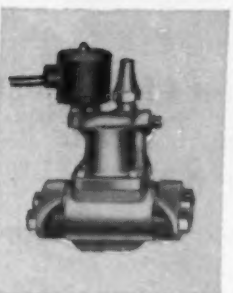
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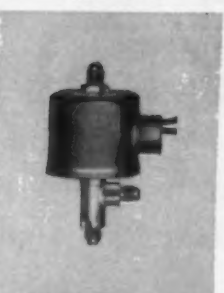
Type M8



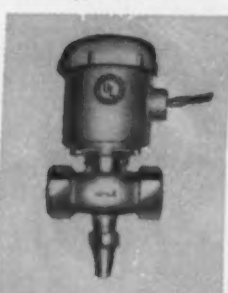
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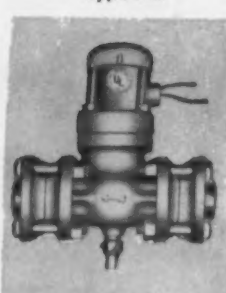
Types 905-13 and 14



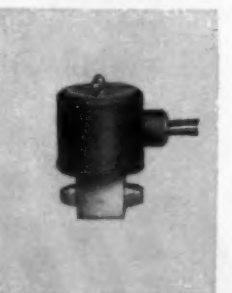
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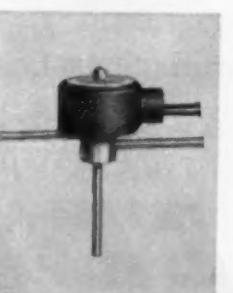
Type M3X



Type R2X



Type SIM55



Type DS2355



Type 955



Type D953



Type DS1770

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You bet we're hot on the

Without a doubt, the new Frigidaire Sheer Look has been the boldest and most sweeping design move in the whole history of the appliance business.

Here has been no timid "toe-in-the-water" approach to a new design. But a complete commitment by Frigidaire — based on a thorough study of long-range trends in style and design.

A change made, not in just a few models — but all across the board. Not in just one or two lines — but throughout *all* Frigidaire 1957 Appliances for the home.

And all this was daringly done in one swoop-in-one model year.

Measured by any standard, the Sheer Look

has had a staggering impact. In the first four months the Frigidaire Sheer Look has received double the publicity ever tendered a Frigidaire line over one full year.

Department stores all over the country are featuring Frigidaire products in windows, because the Sheer Look is "news."

Architects, builders, home planners and homemakers have had nothing but whole-hearted praise. As one remarked, "curves and bulges in the kitchen are now as dead as the dodo."

At no step along the way has Frigidaire hedged on its commitments or compromised with its convictions.



FRIGIDAIRE

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Frigidaire — Built and Backed by General Motors

SHEER LOOK

Frigidaire has gone — and is going — all the way.

For we know that conviction is as important as courage—and it's typical of Frigidaire to back its beliefs with all the resources at its command.

So, you bet we're hot on the Sheer Look. And if you want to see new evidence of that, take a peek into Frigidaire dealers' stores across the nation this week.

There you will see the greatest and most dramatic spring promotion Frigidaire has ever launched — The Sheer Look Color Carnival of Values.

You couldn't find better proof that Frigidaire is on the move, as never before.

the March



Inside Dope

By GEORGE
F. TAUBENECK

(Continued from Page 1, Col. 1)
Man Closest to Ike's Heart. The Moby Dick of Cardiology."

Born Too Soon

Nowadays a man with a good memory can get rich on TV shows. Which reminds Jim Pooler and the mother of Barbara, our switchboard operator, of a fellow known as "Railroad Jack"—who was born too soon.

As you may have suspected from his name, "Railroad Jack" was a hobo. Used to travel

under the Pullmans in a little hammock he'd devised. He journeyed more than 100,000 free miles that way. But that was before he put his fabulous mind to work and sort of settled down.

University of Michigan students met him on the campus. He astounded them with his genuine knowledge about almost everything—and he was impossible to "stump" with a query. (A collection of dimes was taken before he'd go on answering questions.)

He was a dinger on ancient and modern history, famous people, politics, and inventions. Students would bone up on a particular period in ancient times and then toss him a ques-

tion like: "Who was Aelgifu?" He'd tell them she was Emma of Normandy, who married the English king, Aethelred the Unready—and then proceed to trace her, her antecedents and descendants through time—giving interesting asides.

He not only could name all our Presidents but their Cabinets. Give him a year—any year in history—and he'd tell you everything important that happened, say, in 1044.

"Railroad Jack" was a strange, neat, little vagabond—with an even neater mind in which everything was cataloged, ready for use. He said he could live well on 80 cents a day. He particularly liked to visit schools—and schools like to have

"Railroad Jack" visit them. Sometimes he appeared before big, paying audiences and triumphed as "the man who knows everything."

He was born Harry Cooper, in Oshkosh, Wis. He died at Coldwater, Mich., in 1933, with his little cartful of books beside him. By then he had a car Henry Ford—who was fascinated by "Railroad Jack"—had given him.

His good friend, Father Carey, saw to it that he was buried in a plot adjacent to the Catholic cemetery at Ann Arbor.

"Railroad Jack," who worked for dimes, could have been a rich man if he had been born in this era of TV quiz shows. We wonder, though, if he wouldn't have preferred it his way?

Perk Up, Baldies!

Yul Brynner's success as womanhood's newest heart-throb has lifted the spirits of all baldies. Here's another reason

why they should feel better about their shiny noggins:

You never see a bald head on Skid Row!

At least, not in Detroit. This observation is the result of a rather personal survey.

Detroit's Skid Row begins at the Howard Street Mission (where the bums cluster by dozens) and continues down Michigan Ave. toward Briggs Stadium.

Our office is two blocks from the Mission, which is half a block from Yeaman's Restaurant—where we lunch daily. And, as "Dope" readers can jolly well guess, often we walk on down to the Stadium to see ball games.

Never, in all these years of traversing Skid Row, have we seen a derelict who didn't have a shock of hair on his dome as well as plenty of it on his phiz.

Encouraged, fellow skin heads?

Hollywood Publicity Hoax

Syndicated movie columnist Harold Heffernan solemnly reported in many newspapers:

"Marlon Brando stopped in Honolulu on his way back to Hollywood from the Japan shooting of Sayonara. Though he isn't divulging his reasons for the visit, it's known he talked with King Kamehameha, sparking the rumor he will star in the life story of the monarch for his own Pennebaker Productions."

Thus was perpetrated a dandy publicity hoax. The fifth and last King Kamehameha of Hawaii died in 1872. And
(Concluded on Page 15)

30° INCREASES FRESH FOOD SHELF-LIFE!

and it can be done economically!

Watch the NEWS for more news!



PEERLESS has Customer Recognition!



Certain trade names in business — any business — mean quality. Peerless is one of those names.

Never in more than half a century has Peerless made any compromise with the high standards it originally set for itself.

The result: mention Peerless to a customer and he immediately knows you're talking about quality heating or air conditioning. What remains then is simply to put the details of the matter before him and let him make his choice.

It is this customer recognition that has made Peerless sales go up . . . up . . . up!

THE PEERLESS CORPORATION
1853 Ludlow Avenue
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Please rush me full details of the Peerless heating and air conditioning line.

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Firm _____

Address _____

City _____ State _____



Coolair is the low-cost fan to use.

Coolair Fans from 1,400 to 154,000 CFM for homes, schools and factories.

For information and prices send coupon below.

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Please send all information on Coolair Fans for attic ventilation.

Name _____

Address _____

City _____ State _____

IT'S HERE!

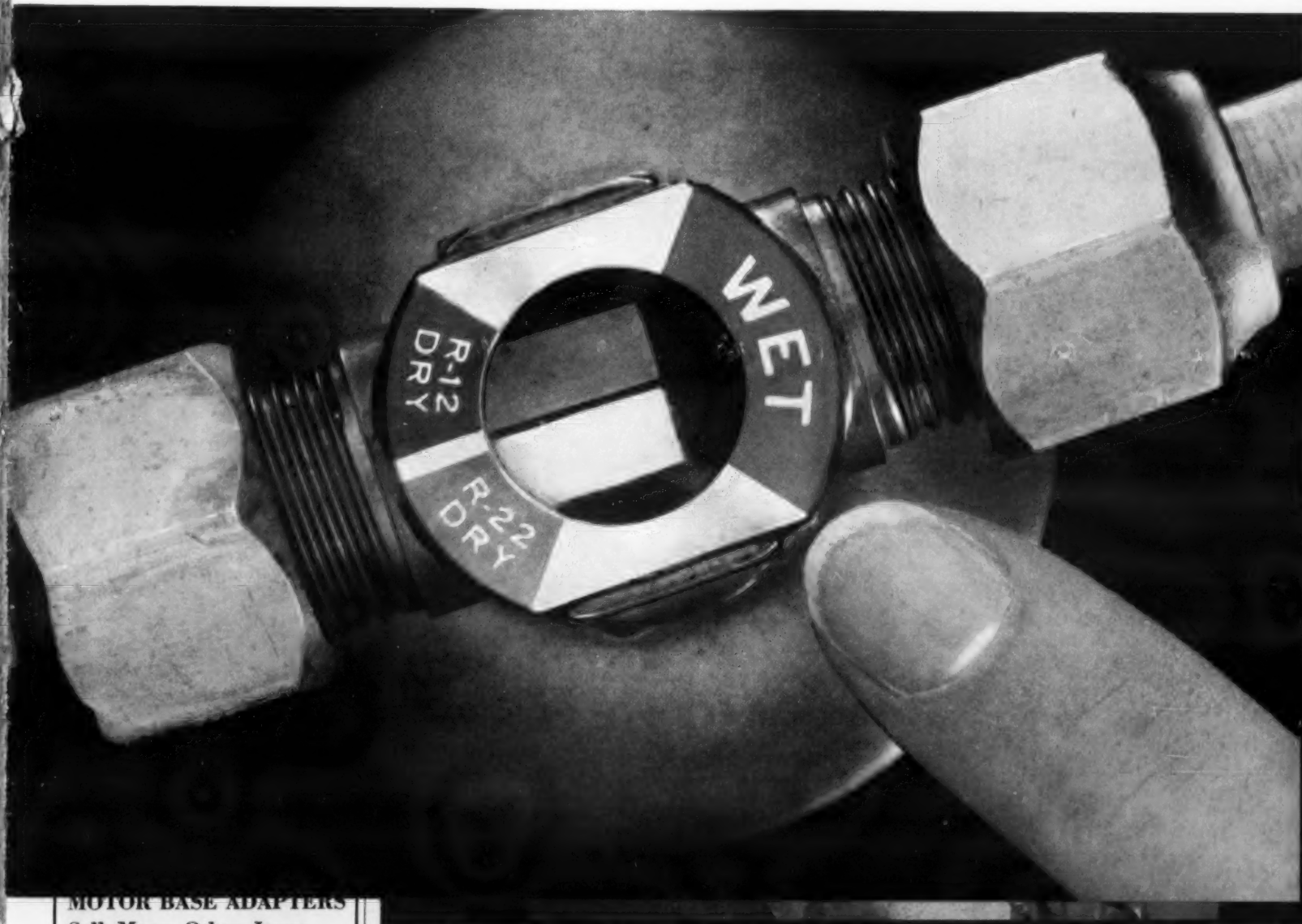
The world's first moisture indicator with a built-in sight glass. The new **ANSUL SUPER DRY-EYE** tells you at a glance if the refrigerant is dry or dangerously wet, and lets you see the condition of the refrigerant. Servicing is made easier, faster, more economical to the owner, more profitable to the serviceman. (Turn this page for details) ▶

Charles C. Cheyney Dies of Heart Attack

BUFFALO—Charles C. Cheyney, 68, vice president in charge of sales for Buffalo Forge Co. since 1953, died recently in Syracuse, N. Y.

He suffered a heart attack during the day while on a business trip.

Cheyney was active for years in the standardization of codes and testing procedures for fans and blowers. He was a former president of the National Association of Fan Manufacturers Inc. and a life member of the American Society of Heating & Air Conditioning Engineers.

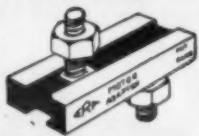


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Keep them in stock. Servicemen will pick up adapters and motors, carry them in their cars, and complete service on the job in one call. Eliminates delay of having motors away for rebuilding. Adapters are easy to install, fit any base. No motor shaft too long or too short. They also bring you more sales in motors, belts, pulleys, controls, etc.

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Engineering Research Associates, Inc.
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Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzales—25¢ each.

Get your copy

Mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

"Worthington compressor MOST EFFICIENT I'VE SEEN"

Executives of Grimes and Hauer Poultry Processing Corporation, in Fredericksburg, Pa., base their decision to purchase refrigeration equipment on three factors: (1) dealer dependability; (2) product performance; (3) compact design and construction of equipment.

Only Worthington equipment meets these requirements so well. The Worthington compressors in our plant, says Walter Grimes, have operated more efficiently than any

I have ever seen. And, he adds, the service supplied by the Worthington dealer—Bohrer-Reagan Corp. of Reading, Pa.—has been uniformly excellent.

Mr. Grimes is shown with dealer Ben Bohrer discussing operation of the Worthington ammonia compressor. This unit supplies refrigeration for cold storage of up to 150 tons of poultry at -5°F. A second Worthington two-stage, 50 hp compressor creates a -35°F tempera-

ture to quick freeze up to 17 tons of processed poultry a day.

Worthington offers a complete line of refrigeration compressors. For information concerning a Worthington franchise, write: Worthington Corporation, Department A7.56, Ampere Station, East Orange, New Jersey.

WORTHINGTON



New SUPER DRY-EYE takes the guesswork out of refrigeration servicing

Here are four big refrigeration questions the SUPER DRY-EYE answers for you scientifically

1

Q If I am using Freon-12 how will I know if it is dangerously wet or dry?

A Just look through the big window at the R-12 indicating element. If it is blue the refrigerant is safe; less than 10 parts per million of moisture present. If it is pink, moisture has climbed above 30 ppm—time to change driers.

2

Q If I use Freon-22 in a system how will I know if it is wet or dry?

A If the R-22 element is green your refrigerant is in safe operating condition—less than 20 ppm of moisture. If the element shows pink, moisture has reached the 25 ppm level; time to change driers, avert a breakdown.

3

Q Will the Super Dry-Eye tell me if there is a low refrigerant charge?

A Yes. The fused glass window, the first proven leak-proof sight glass in the industry, lets you see the refrigerant at all times. Bubbles indicate a low refrigerant charge or a possible restriction in the line.

4

Q Is there a simple, economical way of correcting the problems which the Super Dry-Eye tells me about?

A The T-fitting which houses the Super Dry-Eye can also serve as a connection for an Ansul T-Flo drier without an additional break in the line. It screws in like a light bulb and hand tightening gives a leak-proof seal.



ANSUL SUPER DRY-EYE SPECIAL INTRODUCTORY OFFER (Good until midnight, June 22, 1957)

To be filled in by Ansul wholesaler:

I certify that I have sold an Ansul SUPER DRY-EYE

to the above named customer on _____
and have refunded \$1.50 on this purchase. (date)

Size of SUPER DRY-EYE sold _____

Name of individual _____

Name of firm _____

Address _____

City and State _____

To be filled in by customer: (please print)

Name of individual _____

Name of firm _____

Address _____

City _____

State _____

The Ansul Chemical Co.,
Marinette, Wisconsin

SPECIAL INTRODUCTORY OFFER

Fill out the coupon to the left and take it to your nearest Ansul refrigeration wholesaler. He will refund you \$1.50 on the purchase of a new SUPER DRY-EYE. They are available in 1/4", 3/8", 1/2" and 5/8" flare fittings and range in price from \$4.69 to \$5.72. Take advantage of this money saving offer and prove the advantages of the SUPER DRY-EYE to yourself. This offer is good only until midnight, June 22, 1957.



ANSUL

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 12)

Hawaii's final monarch, Queen Liliuokalani, was deposed in 1893.

Five years later the Hawaiian Islands became a United States territory, and there hasn't been a king—or a royal Kamahehema family—there since.

Gold Broom Works for Drayer-Hanson

Plant manager Fred Savaglio of Drayer-Hanson's main-plant air conditioning and refrigeration facility in Los Angeles has devised a program which, he states, "stimulates worker teamwork while increasing plant appearance and safety."

He says it is a sure way to force "department slackards to get on the ball."

A full-size gilded broom has a place of honor in the department each month which does the best housekeeping job. In the monthly grading, that department which receives the poorest monthly score is presented—and must display—a black, tar-dipped broom.

Those departments awarded the gold Broom three times in any one six-month period are invited out for a party "on the company." One of Hollywood's popular dinner and entertainment spots is the scene of their carnage.

Ratings are determined from points per square foot of department area. Lost-time accidents decrease total points gained for the department suffering said accidents.

Logic, Yet, In Mechanical Brains

Most scientists say a so-called "electronic brain" is stupid because it does only what it is told. Engineers at Stromberg-Carlson-San Diego (a division of General Dynamics Corp.) are about to remedy that situation.

They plan, not to bestow powers of human reasoning on an "electronic brain," but to build a machine which will enable a person to tell a computer

what to do.

No longer will it be necessary to allow an electronic computer doggedly try to solve a problem in one way, long after the partial solution has shown that a modified approach is needed. A device known as a "computer readout and intervention system" makes possible the introduction of human logic—midway in a problem's computation.

The concept was developed by the Servo Mechanisms Laboratory at Massachusetts Institute of Technology. M.I.T. calls it a "Gestalt system" and says its purpose is "to facilitate the transmission of general ideas as in a conversation, between a human and a computer."

Harold P. Field of Stromberg-

Carlson reveals that his company has signed a contract to produce such a readout system for the Air Force Armament Center at Eglin Air Force Base, Florida. This will be the first application of the concept in commercial operating equipment. It will be designed for use with a Remington Rand Univac Scientific computer.

Installation will consist of four pieces of equipment—a logic console, a high-speed camera recorder, a visual display console, and a flexo-writer. As to this logic console: it will interpret the pulses received from the Univac Scientific computer so that they can be displayed for permanent recording, and for visual display where

they can be examined by the scientist-operator.

Operator of the computer then can watch the results of the computation and, when desired, can intervene directly—and feed supplementary instructions and information into the computer by means of the Flexowriter.

Thus the problem may be altered at any point when the preliminary solution indicates to the human operator that a change is desirable. Without this type of equipment the computer would, inexorably, continue with the solution on the basis of its original instructions, no matter how useless the activity might have become.

Onward, progress! And hail, mankind! We are still needed!

Charles C. Cheyney Dies of Heart Attack

BUFFALO—Charles C. Cheyney, 68, vice president in charge of sales for Buffalo Forge Co. since 1953, died recently in Syracuse, N. Y.

He suffered a heart attack during the day while on a business trip.

Cheyney was active for years in the standardization of codes and testing procedures for fans and blowers. He was a former president of the National Association of Fan Manufacturers Inc. and a life member of the American Society of Heating & Air Conditioning Engineers.



"Worthington compressor MOST EFFICIENT I'VE SEEN"

Executives of Grimes and Hauer Poultry Processing Corporation, in Fredericksburg, Pa., base their decision to purchase refrigeration equipment on three factors: (1) dealer dependability; (2) product performance; (3) compact design and construction of equipment.

Only Worthington equipment meets these requirements so well. The Worthington compressors in our plant, says Walter Grimes, have operated more efficiently than any

I have ever seen. And, he adds, the service supplied by the Worthington dealer—Bohrer-Reagan Corp. of Reading, Pa.—has been uniformly excellent.

Mr. Grimes is shown with dealer Ben Bohr discussing operation of the Worthington ammonia compressor. This unit supplies refrigeration for cold storage of up to 150 tons of poultry at -5°F. A second Worthington two-stage, 50 hp compressor creates a -35°F tempera-

ture to quick freeze up to 17 tons of processed poultry a day.

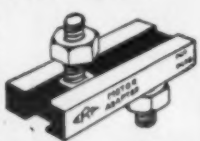
Worthington offers a complete line of refrigeration compressors. For information concerning a Worthington franchise, write: Worthington Corporation, Department A7.56, Ampere Station, East Orange, New Jersey.

WORTHINGTON



MOTOR BASE ADAPTERS Sell Many Other Items

Keep them in stock. Service-men will pick up adapters and motors, carry them in their cars, and complete service on the job in one call. Eliminates delay of having motors away for rebuilding. Adapters are easy to install, fit any base. No motor shaft too long or too short. They also bring you more sales in motors, belts, pulleys, controls, etc.



SIZES FOR 1/4 to 3 H.P. Inclusive
Engineering Research Associates, Inc.
3475 East Nine-Mile Road
Hazel Park, Michigan

Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzales—25¢ each.

Get your copy

Mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

Selling for Profit—(In Residential Air Conditioning)

Advertising Can 'Condition' a Buyer's Mind But Personal Contact Is Needed To Close Sale

By Frank Klein

This instalment and the following are dedicated particularly those of us, through lack of practicing salesmanship and an unwillingness to apply success rules established in parallel fields, excuse our failures to sell successfully unless backed up by a "name" product.

It is pointed at those salesmen who, in misguided conceptions of "trade name acceptance," are too prone to excuse these failures with patent answers to our manufacturers with phrases like, "I can't sell your product here in this community . . . folks around here just don't know the name."

You can find many people in these United States who never heard of trade names such as B.V.D., Modess, Abercrombie & Fitch, Listerine, Early Times, or Smirnoff. Yet these names are daily associated with the lives of the American public through national advertising media.

WHY? Primarily because these very same people might never have recognized the NEED for products identified with such famous trade names.

'Who and What' Influences

In the field of comfort cooling, national advertising agencies and their market research staffs spend literally millions of manufacturer's dollars chasing the nebulous answer to "WHO and WHAT" influences the sale of products in this field. These same people have since the inception of residential cooling and its importance as a market, set about determinedly to obtain the answer in this field.

National research of the results of these various advertising councils, still come up with the same answers:

WHO?—John Q. "Rugged-individual" Public.

WHAT?—PERSONAL CONTACT!

National marketing research still reveals that with all advertising media available to the manufacturer it still remains

that all do nothing more than pre-condition the buying mind; that the actual sale is created and closed only by personal contact between seller and buyer.

Advertising counselors will tell you that advertising media, regardless of type can only do ONE THING that will help the Dealer, and that if it accomplishes that, it will have performed every mission required of it. That one thing is to "condition" the mind of the buyer; but advertising cannot CLOSE the sale.

Establishment of a "trade name" by a manufacturer can

"condition" the buyer's mind, to establish confidence, but unless that confidence is carried on down through the echelons of sale by the Dealer himself, no amount of "confidence conditioning" through advertising will get the job done.

'Look Up Various Home Surveys'

There have appeared many residential air conditioning sales surveys in recent months, many of them carefully reported in this publication. Some of the most important have been the du Pont survey, the publication

This series of articles is for those who seek to know the basic "appeals" and principles in selling residential air conditioning. This is the ninth article in the series which began March 18.

Frank Klein has been associated with the air conditioning and refrigeration industry for over 20 years. He has held executive sales positions with a number of air conditioning manufacturers. At present he is a partner in Heidenreich, Klein & Associates of Dallas, marketing specialist.

of unit sales through the ARI, and surveys of all sales in various cities of the country, as reported by AIR CONDITIONING & REFRIGERATION NEWS.

If you by-passed any of this information obtain back copies of the NEWS in which both The du Pont Survey and independent surveys emphasized the influence of the dealer and point-of-sale contact in residential cooling.

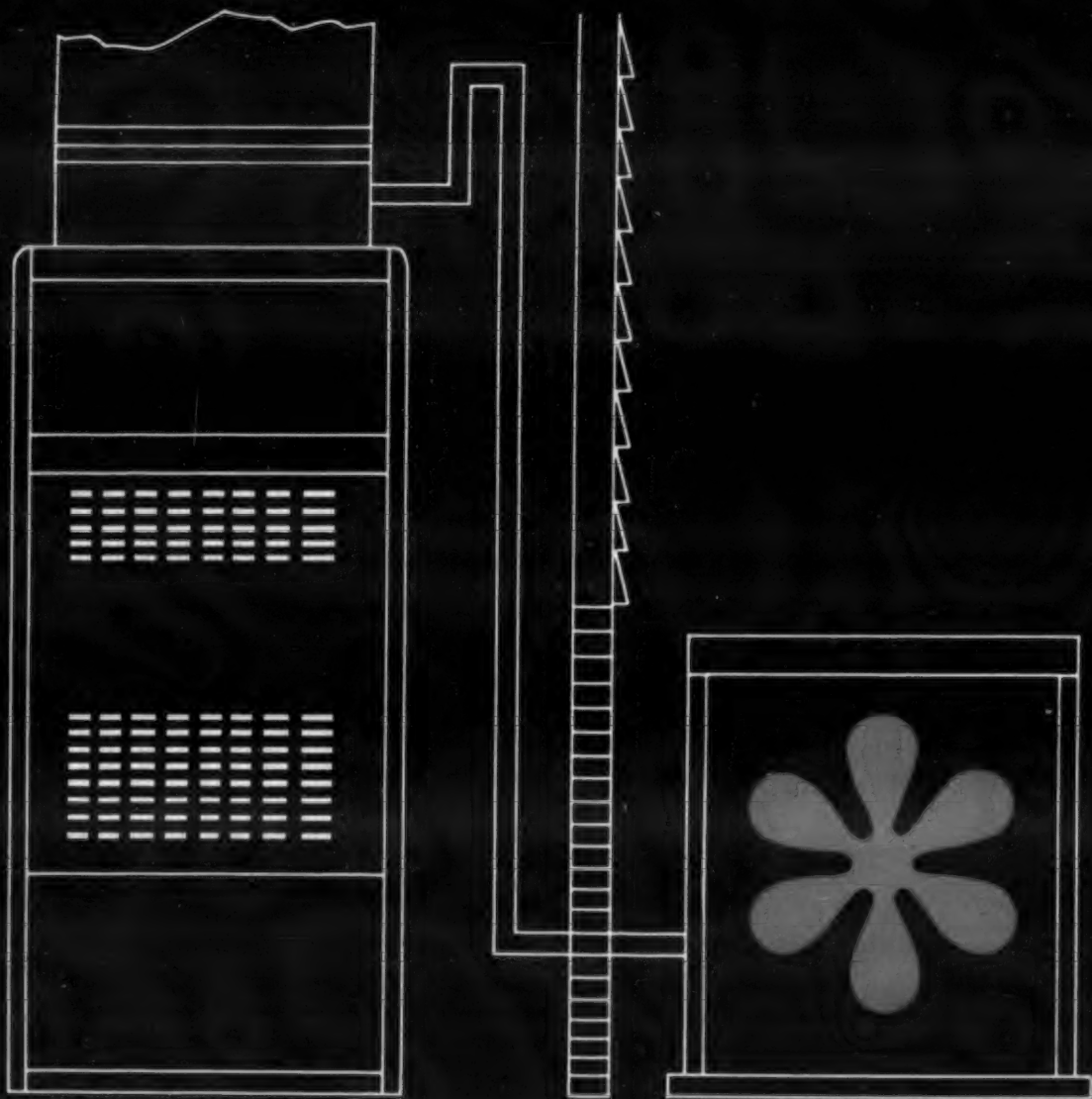
Thus let it be established that the Consumer does NOT buy his equipment from THE MANUFACTURER—he buys it from

YOU and ME. Furthermore let it be established that Advertising Media, regardless of type, is fundamentally a "conditioning" influence on the sale.

Let us consider some of the "conditioning" influences made available to us by our manufacturers to be used as sales tools. Manufacturers in our field spend millions upon millions of dollars each year in constructing advertising sales tools, planning advertising programs and implementing them, using every known reputable

(Continued on next page)

start a second sale...



**CONSTANT
TEMPERATURE
AND
HUMIDITY
AT 30°!**

**and it
can be done
economically!**

Watch the
NEWS
for more
news!

Selling Residential Cooling--

(Continued from preceding page) and considered source to give us tools with which to do our job.

But in my over 20 years' experience in the field of sales in comfort heating and cooling, contacting dealer and installing contractors all over this country, I have yet to find better than 5% of them who understand and know best how to use such media and tools, and less than 2% WHO ATTEMPT TO USE THEM AT ALL.

Direct mail pieces, envelope stuffers, product advertising pieces, etc., don't lie—like the famous Old Soldier expression, they just fade away in the darkness of book cases and shelves or the trash can.

Advertising, sales books, direct mail pieces, display materials, instruction books for the

user, demonstrating easels, slide films, are an AUXILIARY SALES FORCE—to benefit by this force you have to work with them and give them an opportunity to work for you! In this way they perform their part of the "influence" on sales.

Chain Reaction

Sales Aids are your advance agents as well as your point-of-sale salesmen. They either initially or further create desire in the mind of your prospect. Furthermore, they "qualify" a prospect and establish him as definitely in the category of Prospect or Suspect. Using sales aids throughout your sales story tends to remind and spotlight the Feature Aspect of your product.

There is a "chain reaction" that advertising and sales aids

can set up in helping you to exert maximum influence and lead your buyer to say "YES." The following is a typical "conditioning" foundation, using the sequence of planning in developing this auxiliary sales force, that your manufacturer envisions when he sets into motion advertising counseling and spends his advertising dollar. THE VALUE OF ADVERTISING AND DISPLAY

The specific mission of Advertising and Display is to create desire in the mind of you and your manufacturer's prospects. Advertising, via publications, radio, and television, "blankets" more of your territory in less time than it would take for you to carry the same initial story yourself; furthermore they repeatedly "get the message" every time prospects hear a radio program, hear and see a television program, or pick up a publication, thus "conditioning" the prospects mind for your personal contact follow-up. These are some of your Advance Agents.

These also work as Advance Agents, contacting more prospects in less time than you could do the job yourself initially. People who react to such media immediately qualify themselves as prospects. Such pieces are usually aimed at INFORMING and arousing CURIOSITY. They are further aimed at opening the door for you.

DIRECT MAIL PIECES

These also work as Advance Agents, contacting more prospects in less time than you could do the job yourself initially. People who react to such media immediately qualify themselves as prospects. Such pieces are usually aimed at INFORMING and arousing CURIOSITY. They are further aimed at opening the door for you.

PRODUCT FOLDERS AND SALES BOOKS

These are a follow-up of the brief story told by the publications, the Radio, the Television, and the Direct Mail piece. More detailed in information they lay the ground work for a demonstration or sales story in your personal contact by stimulating interest and arousing

curiosity. Furthermore they usually, if properly constructed, show the product at work in typical application.

Sales books in this category cover instruction in the use of the product and inform the prospect how best to benefit by the Feature Aspects of your product. They outline conveniences, benefits, and "profit" that pre-establishes in the mind of your prospect the foundation for your closing sales story.

POINT OF SALE SELLING TOOL

These, such as Demonstrating Easels, pictures of actual and typical installations, etc., should be in your hands at the time you make your personal contact. Such visual aids concentrate the attention of your prospect on your story and your product; they tell a "building block" story of the features of your product.

Furthermore they can usually be depended upon, if properly constructed, to keep you and your story in a sequence that will build toward your closing story.

Dramatic Demonstrations

Also in this category can be found the various dramatic demonstration equipment such as parts, etc., that illustrate both quality and feature of your product.

All of these make a complete story and help to present your sales story to your prospect. When used properly they can gain "prospect participation."

These "tools" are a visual method of proving the value of your product that has been built up in all of the foregoing media. Remember an idea can be sold most effectively and much more rapidly when its illustration is made visually.

Slide films and motion pictures come in this category also. Once again these visually accomplish an illustration of your product and the sales story you construct.

Thus, armed with all of the "conditioning" that can be accomplished by the Sales Aids or tools as outlined above, there remains but one last link in the "chain reaction" to accomplish your purpose and to exert the ultimate impact of your own influence on the sale and that is PERSONAL CONTACT, FOLLOW UP.

Imaginative Selling and Intelligent Sales Promotion introduces the product to your prospect; these embody among all other things the intelligent use of Sales Aids. They tell the story in the briefest form how much and how well you can influence a sale by the way you use them.

Men who work with tools, such as machinists and carpenters, realize the necessity of their tools to doing a good job; why then should we as salesmen fail to recognize the necessity of good selling tools and their skillful use?

Deems Taylor, music critic and writer, summed up recently, his criticism of those who fly the flag of Salesmanship and sail under false colors.

Mr. Taylor was in the market for a system and equipment in our line of business and he called up some three or four dealers handling products, according to their advertisement,

(Continued on next page)

Here's how You get Air Conditioning Profits from Furnace Sales with Westinghouse!

New "Profit-Mates" . . . Westinghouse Furnaces and Air Conditioners! They are specifically designed to go together. Make it possible for you to install heating and at the same time set-the-stage for air conditioning profits, too. From matching two-tone color to the sweep of smooth-line cabinet styling, you'll find that each residential furnace installation—starts a second sale for you! You get all the selling power of the Westinghouse name; plus automatic heating and cooling that is quiet, economical, dependable and best of all—profitable!

LOOK AT THESE WESTINGHOUSE FURNACE FEATURES:

- **COMPLETE LINE**—there is a residential unit for every heating need. Choose from: gas and oil-fired basement, utility and counterflow units; plus a *hide-a-way* gas-fired horizontal unit.
- **ADAPTABLE**—simply add a cooling coil to the furnace plenum and a remote air-cooled condensing unit outside the home . . . using the same large centrifugal furnace blower and duct system, your customer has year-round air conditioning.
- **QUIET**—fully insulated cabinets, resilient mounting of all moving components, noise-free heat exchanger—

and more . . . make all furnaces and air conditioners "whisper quiet."

- **ECONOMICAL**—low in initial cost; surprisingly low in day-to-day operating cost. You heat and cool using the same ducts for additional efficiency and economy.
- **AUTOMATIC**—the same thermostat used for cooling sets the temperature for heating. A simple finger-tip touch delivers constantly even heat—24 hours a day.
- **COLORFUL**—all furnace cabinets are finished in handsome two-tone beige and charcoal to blend with interior decor—perfect "Color-Mates" for Westinghouse Air Conditioners.
- **ACCESSIBLE**—lift-lock panels bring all components within "arm's reach" . . . makes it possible to service and inspect units with minimum effort.
- **PREWIRED**—all controls—wiring harness for oil-fired units—are factory-wired and tested to reduce installation costs and insure trouble-free operation.
- **WARRANTED**—ten-year warranty on heat exchanger; plus a liberal one-year warranty on the entire furnace, insures absolute customer satisfaction.

The only *really new* heating and cooling line—plus: fast delivery, sales training, technical aid, finance plans, local advertising, sales promotion—and more. Just a few of many reasons why a Westinghouse Franchise is valued as the "Franchise With the Future" by leading contractors and dealers across the nation.

YOU CAN BE SURE...IF IT'S Westinghouse

AIR CONDITIONING DIVISION STAUNTON, VIRGINIA

J-80545A

Selling Residential Conditioning--

(Continued from preceding page) covering finish, structural components, and motor operation. However they failed to answer the questions Mr. Taylor was most interested in:

- How their product differed from their competitor
- How their operation would benefit him most

c. How much their product cost in relation to other competitive products.

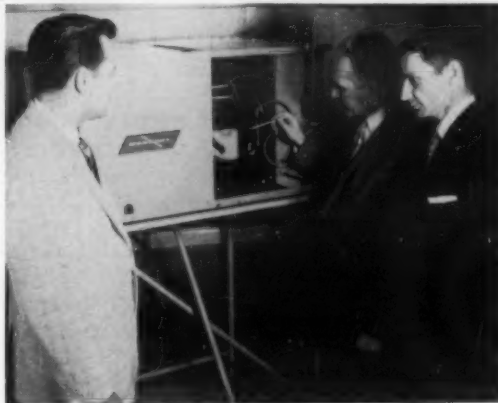
Had these salesmen employed the Selling Tools they had at their disposal, and to their best advantage, one of them who exerted the most influence through such an approach would have walked off with an order. Mr. Taylor merely asked for information from what he considered to be "experts" in their field and they failed him.

In Residential selling, I repeat, it is your PROSPECT who must say YES; it is YOU who must get him to say YES.

Both YOU and YOUR PROSPECT influence the final sale but it is YOU who must exert the ultimate influence, utilizing all of the "conditioning" that has been made available to you, to CLOSE the sale you are after.

(To Be Continued)

Mercury Offers 2, 4 Hp. Conditioners



NEW ENTRY in the air conditioning field is the Mercury line of 2-hp. and 4-hp. models which will be made for the Mercury Div. of Lord & Palmer, Grand Rapids, Mich., by the O. A. Sutton Corp. The line will be handled by distributors who operate on a strictly wholesale basis. In the picture (l. to r.) are Arnold Kowsky, Lord & Palmer; Francis A. Hughes, special products division, O. A. Sutton Corp., and Earl Palmer.

**CONSTANT 30°
EXTENDS
FRESH FOOD LIFE!**

and it does it economically!

Watch the NEWS for more news!

Dealers Left 'Wiser' by Traveling Bryant Conditioning Specialists

INDIANAPOLIS—The happy, wandering vaudeville troopers have nothing on two Bryant Mfg. Co. air conditioning spe-

cialists—Charley Eskew and Joe Mekel—who took to the road Jan. 29 and returned April 26, routing themselves through Indianapolis (home) periodically.

Unlike vaudeville performers who "left 'em laughing," Charley and Joe "left 'em wiser." And in the process they logged about 12,000 miles, the equivalent of four trips from New York to London or half way around the world.

With Joe covering the east and Charley the midwest and west, both men instructed dealers in cooling loads and how to compute them with Bryant's "Golden Rule Calculator," duct sizing and c.f.m., air conditioning applications, installations, and service problems.

To assure complete dealer understanding of the material presented, both men did more than simply lecture. They demonstrated as they proceeded, using the Bryant air conditioning unit in point. In other words, these two-day sessions were of the "nuts and bolts" variety.

And both men are fully equipped to handle down-to-earth air conditioning problems. Charley has been engaged in air conditioning for 26 years and Joe for 16.

Of course they know that two days isn't long enough to teach air conditioning know-how. With Bryant's air conditioning product manager, Mike Fortier, they've carried on a continuing air conditioning education program now entering its third year.

That it's paying off is indicated by figures which show that Bryant's sales of central system equipment were up about 50% in 1956.

Citing an example of the program's benefit, Eskew reports: "Dealers in various sections of the country who have taken advantage of our program are enthusiastic, and with good reason."

"Before it began they couldn't be induced to touch air conditioning, but were content to pin their sales hopes entirely on our oil and gas-fired heating equipment. Today, many of them derive more than one-quarter of their dollar volume from air conditioning sales and installations."

At the two-day meetings, each dealer was given various "text" book materials.

But Bryant's air conditioning training program doesn't stop here. It's supplemented by factory training schools, technical aids made available to dealers and distributor meetings.

**Mr. Mulligan gets
information
the easy way**



The situation will always be well in hand, when you're supplied by a complete air conditioning and refrigeration wholesaler. And when you need a refrigerant, be sure you ask for Freon®—the refrigerant backed by more than 26 years of Du Pont technical and manufacturing leadership. "Freon" sets the industry's standard for purity and dryness.

Buy where
you see this sign...

FREON® REFRIGERANTS

*Freon and combinations of Freon- or F- followed by numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon refrigerants.

DU PONT

REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

For more information about products advertised on this page use Information Center, page 32.

the quality tells... the quality sells

new **JANITROL**[®] waterless
ADD-ON COOLING SYSTEM



adapts most any warm air furnace
for powerful, efficient summer cooling
... features exclusive PRIDE O' YARD
air-cooled compressor-condenser unit





JANITROL®
gives you
the

Golden Key TO PROFITS

in air conditioning

...with this 7-point program for **SALES**

1

A complete quality line...including the most powerful air-cooled "add-on" unit in the industry!



NEW JANITROL SRA

Powerful, quiet performance with outside temperatures to 125° F.—modern, space-saving design—easy to install—moderate pricing—these are just a few of many reasons you'll make more money with the Janitrol SRA "ADD-ON" Cooling Conditioner!

It's a natural for the lush modernization market. Adapts most any warm air furnace for full central cooling. No floor space needed. Evaporator coil mounts in duct in either upflow or downflow systems. Waterless operation eliminates plumbing, sewage, water supply problems. 2, 3, 4, 5 and 6 HP sizes.

Exclusive "PRIDE O' YARD" Compressor unit, styled by a leading designer, is specially-engineered for operation with outdoor air up to 125° F. And its beautiful, streamlined housing completely outmodes them all—eliminates that undesirable "dog house" look!

No doubt about it! The Golden Key to Profits is yours with this great new Janitrol SRA and all the other models in Janitrol's complete line of air-cooled and water-cooled conditioners. PLUS—2, 3, 4, 5, 6 and 7 in Janitrol's new 7-point program for sales!



2 new, low trade net prices

Advanced Janitrol engineering—new automated production methods—volume building sales leadership—all add up to more profits on every sale. This new Janitrol pricing plan lets you move in on competition with top-quality Janitrol products at *really competitive prices!*

3 new dealer stocking plan

As a Janitrol dealer qualified under this new plan, you'll keep your working capital *working*, instead of "freezing" it in inventory. You'll have the inventory you need for prompt deliveries, better service, year 'round.

4 new retail customer finance plan

Makes Janitrol cooling and heating easily available to the six out of ten families who haven't the cash but have the credit...on easy installment terms. No down payment. Up to three years to pay. Finance up to \$3500. No risk or recourse to dealer, no collection problems. Eliminates red tape and delay. Keeps "hot" prospects from cooling off!

5 new local level promotions — to the rich modernization market

A high-impact, sales-producing merchandising program created by Janitrol for your needs, your market, your profit ambitions! Newspaper ad mats, radio and TV musical announcements, window and in-store displays, color-illuminated outdoor signs—all yours as a qualified Janitrol dealer. And Janitrol sets up the complete program to the last detail, saves your time for selling.

6 new builder promotion package

A complete merchandising program to help you snare your share of the new house market. Chock full of tested promotion ideas that give you a running start on competition—let you offer the builder a service that enables him to upgrade his houses with quality Janitrol equipment, appeal to more prospects, *stay competitive!*

7 new select dealer program

Today, Janitrol recognizes a new era in company-dealer relations. The days of "playing it by ear" are no more. There's a need for continuing close cooperation between both parties—an "open door" for exchange of ideas. The Janitrol Select Dealer Program makes these things possible, and gives you extra benefits besides. Business development counsel, training schools, prizes, vacations, to mention a few. Right now's the time to qualify!

JANITROL HEATING AND AIR CONDITIONING DIVISION
Surface Combustion Corporation, Columbus 16, Ohio

Please show me how Janitrol's 7-point program for SALES can give me the GOLDEN KEY TO PROFITS.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____

ZONE _____

STATE _____

4482 SRA

Fill in and MAIL TODAY!

get your *Golden Key* TO PROFITS
with **JANITROL®**

Ask your JANITROL representative for the facts or RUSH THE COUPON TO US!
NO OBLIGATION!

Complete line of gas and oil furnaces, unit heaters, conversion burners, water cooled and air cooled summer conditioners, combination heating-cooling conditioners.

Now Representing...

TRANE CO.—Florida Weather-makers, Inc., Jacksonville, was recently named an outlet for the firm's self-contained air conditioning and heating products.

MATHES CO.—Judson C. Burns, Inc., Philadelphia, has been appointed exclusive associate manufacturer of commercial and residential air conditioning equipment in 18 counties of eastern Pennsylvania, southern New Jersey, and Delaware. The firm will also sell Mathes room air conditioners in that territory.

REMINGTON AIR CONDITIONING DIV., REMINGTON CORP.—Appointment of **J. V. Folsom & Son**, with headquarters in Dallas and a branch in Houston, Texas, as room air conditioner representative in Texas and Oklahoma has been announced.

LORD & PALMER, INC.—Star Steel Supply Co., Detroit, was recently named Mercury air conditioning distributor in that area for self-contained air-cooled units.

SLANT-FIN RADIATOR CORP.—Appointment of **George Garbowit**, Baltimore, as direct factory sales engineer for the Baltimore-Washington, D. C. area has been announced.

NOVI EQUIPMENT CO (Novi, Mich.)—K & M Tire Co., Savannah, Ga., has been appointed exclusive distributor for Novi auto air conditioners there.

BRONSON FAN MFG. CORP.—Danco Engineering & Sales, Columbus, Ohio, has been named manufacturer's representative for sale of fan blades and blower wheels in southern Ohio, southern Indiana, and western Kentucky.

PHILCO CORP.—Graybar Electric Co. of Seattle has been appointed distributor for Philco products for the Seattle and Tacoma, Wash. area. Graybar formerly handled Hotpoint Co. products in that area. Love Electric Co., Seattle, the former Philco distributor in the area, will now devote its entire business to distribution of supplies.

RITTLING CORP. (Buffalo)—Addition of five new sales representatives has been announced to handle complete lines of baseboard radiation, cabinet convectors, unit heaters, back draft dampers, and other heating equipment. They are: **J. H. Ballenger**, Cincinnati; **Tenaire, Inc.**, Phoenix, Ariz.; **W. H. Welch**, Seattle; **D. M. Allen Co.**, Kansas City, Mo.; **Midwest Sales Co.**, St. Louis.

JOHN E. MITCHELL CO. (Dallas)—McKethan Oldsmobile, Inc., Charleston, S. C., has been named distributor of "Mark IV" auto air conditioners in that territory.

MITCHELL MFG. CO., DIV. OF CORY CORP.—Fridley Bros. of St.

Louis has been named distributor for the firm's room air conditioner line, replacing Disco Distributing Co. Fridley Bros. formerly handled room air conditioners for Gibson Refrigerator Co., Div. of Hupp Corp. It will service dealers in eastern Missouri and southern Illinois.

AMERICAN GAS MACHINE CO., DIV. OF QUEEN STOVE WORKS, INC.—Appointment of **Scotsman Ice, Inc.**, San Francisco, as exclusive distributor of Scotsman "Super Cubers" and "Super Flakers" for the Bay area has been announced.

DRAYER-HANSON, DIV. OF NATIONAL-U. S. RADIATOR CORP.—Midgley-Huber, Salt Lake City, has been signed as exclusive sales agent in Utah and Idaho.

RHEEM MFG. CO.—Service Plumbing Supply Co. has been named air conditioning distributor in the greater Fort Worth, Texas trading area.

Takes Technical Study



ENTERING two-year training in refrigeration in Columbus, Ohio is **Raj Krishna Aggarwala**, 22, from Bikaner, Rajasthan, India who is welcomed into RSES by **Ivan C. Stepnich**, educational chairman, during the Buckeye State Association of RSES convention. Raj studies refrigeration and air conditioning sponsored by International RSES and does on-the-job training with Columbus Refrigeration Co. He hopes to return and indoctrinate his countrymen in modern refrigeration and air conditioning.

When your problem is...
SIZE...SHAPE or METAL
 your answer is
DEAN
COLD PLATES
 "Job Tailored" to your specifications

A baffling problem? Try a Dean Cold Plate made expressly to suit your particular requirements. Made in a variety of metals in cylinders, U's, angles, tanks, etc.

DEAN PRODUCTS, INC. 1042 Dean St. STerling 9-5400 Brooklyn 38, N.Y.

Choice territories now available for sales representation. Inquiries invited.

**Another ballot for product protection...
 Another vote for pay-off performance**

Line sketch shows exclusive totally-enclosed switch single phase integral hp motor.

Sound investment for product success
 ... A. O. Smith motors ... application-engineered for quiet operation, low maintenance, long-life service

IT'S simply good business to insist on A. O. Smith fractional and integral hp motors for blowers, exhaust and ventilating fans. Since these motors live up to your best product designs — you'll never have to live down ragged performance in the field.

Application-engineered to match your product perfectly — A. O. Smith motors offer progress-pacing features that add up to sure power in a smaller, lighter package ... complete customer satisfaction.

Integrals are built in single phase (1 thru 7½ hp) and polyphase (1 thru 150 hp) in various speeds and frequencies. Fractionals are offered with many variations to meet both standard and custom requirements, ¼ thru 1 hp, 56 frame size in rigid or resilient base. FHP motors with special flanges are also available.

And more than 270 service stations, strategically located throughout the United States, give you low cost, 24-hour motor repair and parts replacement service.

Through research  ... a better way

A.O. Smith
 CORPORATION
 ELECTRIC MOTOR DIVISION
 Tipp City, Ohio
 International Division: Milwaukee 1, Wisconsin

Filtrine Since 1901

Tank Type WATER COOLERS



- ◆ Extra-large storage
- ◆ Safety from freeze-up
- ◆ Fast hourly recovery
- ◆ 20-year life construction

Capacities: 5 to 500 g.p.h.
 Storage: 2 to 240 gals.

Water coolers for all uses factory-packaged with your condensing unit. Write for literature.

FILTRINE MFG. COMPANY
 216 W. PROSPECT ST. • WALDWICK, N. J.



NEW FRACTIONAL HP MOTORS
 in 56 frame size, rigid or resilient base, totally-enclosed fan-cooled, are offered.



INTEGRAL HP MOTORS
 offered in single phase, 1 thru 7½ hp and polyphase 1 thru 150 hp. Old and new NEMA frame sizes available, 1 thru 10 hp.

Women 'Clean Out' Pre-Packaged Meat In Italy's First Supermarket; Pre-Package Produce, Fruit, Other Items

ROME, Italy—Pre-packaging meat in the first American-style supermarket has Italian women agog and almost put the new store "out-of-business."

Throngs of housewives—and many male shoppers—jamming the "supermercato" cleaned off the shelves more quickly than they could be restocked.

Women of Rome really took to "pre-impacco," a newly-coined Italian word meaning pre-packaging, which was reported to have automatically boosted sale of whatever they contained—fruit, vegetables, eggs, bread, rolls, cheese, poultry, and (as long as it lasted) meat.

All those foodstuffs are traditionally traded loosely over the counter at stores and outdoor markets throughout Italy.

Because shelves were so

quickly cleaned out, the supermercato's meat department soon conceded defeat. It fell back on the time-honored Italian way of hacking up cuts to specifications of individual patrons, it was explained.

Old-time butchers at the open-air neighborhood market in the Via le Libia right outside the new "American store"—popularly so-called, even though it is owned entirely by Italians—are said to have sneered at the new meat department.

Not for long promised the supermarket management, because the well-liked steak bottleneck would soon be overcome.

In addition to pre-packaged items, the supermercato offers a "vast array" of Italian kitchen stand-bys in cans. Garish labels

also advertise such imported delicacies as American salad dressings, it was noted.

Only frozen foods available are filets of whiting and plaice. There are still many more Roman kitchens without refrigerators than with, and freezers are said to be hardly known here yet.

This first Roman commercial supermarket is a direct outgrowth of the great interest reported caused here last summer by a model American supermarket that the National Association of Food Chains exhibited under sponsorship of the U. S. Department of Agriculture. (This was reported in the June 4, 1956 issue of the NEWS).

Supermercato prices are claimed to be an average of 20% lower than those of conven-



THIS "clock sign" has been a handy commercial refrigeration sales builder for the Cordes Electric Co. in St. Louis. Ed Cordes installs one in every place he puts in a commercial unit. Viewers associate Cordes and his equipment with the store name.

tional Italian food stores. Its price tags compare favorably also with the age-old outdoor market. It has the further advantage of lacking flies, noise, and violent odors of the outdoor stalls.

Apart from its "imposing" spaghetti department, the new supermarket looks much like its American counterpart. Customers pick their purchases from racks and push their loaded carts to the checkout counter.

Only opened a short time ago, the supermercato sits under a

big "SM" neon sign on Rome's eastern outskirts. In districts like this it is said to be easier to get the necessary license for opening a new business than in the center of Italy's capital city.

On the first day of operation 500 customers were counted in the supermercato. Now an average of 2,500 daily shoppers jostle around the premises, no larger than the average U. S. drugstore. Between 25 and 35% are men.

The youthful manager, who studied scientific grocery handling in Switzerland says, "We were afraid our shop would be too big. Now we realize it might be much larger."

This excellent start prompted the store promoters to push plans for opening five more supermarkets in outlying parts of Rome. Branches in Milan, Nables, and other cities are to be set up later, it was pointed out.

Maintenance Record Aids Mfrs. Who Make Use of Many Pumps

SENECA FALLS, N. Y.—To aid manufacturers whose production involves the use of many pumps, Goulds Pumps, Inc. here has designed a pump maintenance record card which provides for complete information on installation, application, and maintenance.

Space is provided on each card, using both sides, to keep a complete record for a period of years—in some cases for the entire life of the pump.

"Complete maintenance records, filed in an accessible location, are invaluable in diagnosing pump failure, in ordering repair parts, in establishing lubrication and maintenance scheduling," it was pointed out.

"In addition, they are valuable in determining pump suitability for new requirements due to process changes. Notation of pump failures and the repairs required can be used to define the optimum period of any given pump before complete inspection and overhaul is required."

A supply of these cards may be obtained by writing to Goulds Pumps, Inc., 28 Black Brook Rd., Seneca Falls, N. Y. The Number of pumps for which cards are needed should be indicated.

Delbert E. Newman Dies at 63

SCHENECTADY, N. Y.—Delbert E. Newman, 63, a pioneer in the development of the home electric refrigerator, died recently.

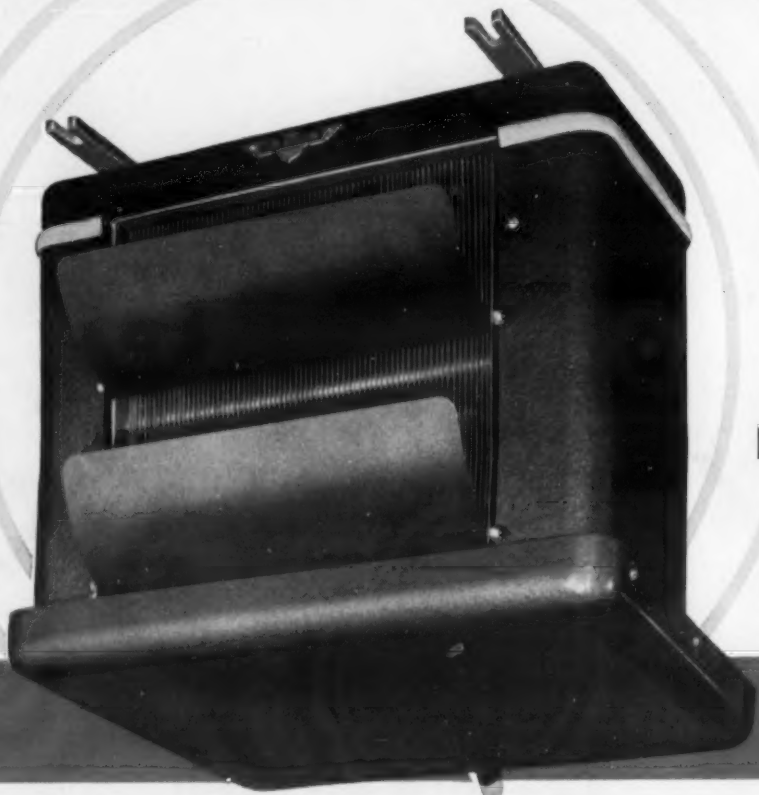
He worked for many years at General Electric Co. here with the late Christian Steenstrup, inventor of the sealed refrigeration unit, whom he succeeded in 1944 as head of G-E's refrigeration and engineering department.

NEW DESIGN

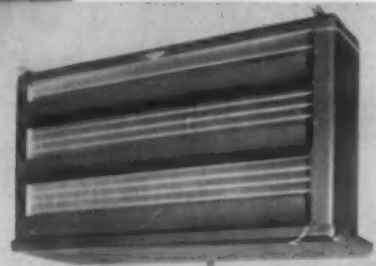
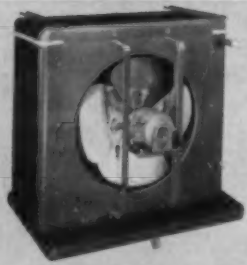
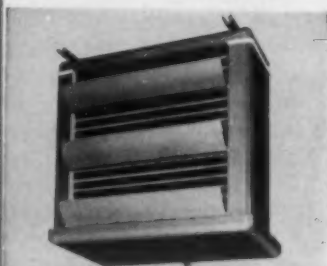
NEW CONSTRUCTION

NEW CAPACITIES

NEW MODELS



THE GREATLY IMPROVED LARKIN HUMI-TEMP LINE



Now the world famous line of standard Larkin Humi-Temp units is better than ever—which is saying a lot, because they have been the accepted standard throughout the industry for years!

New Capacities—Ratings from 2,500 to 48,000 BTU/HR to more nearly balance compressors. Model numbers now designate capacity.

New Construction—to provide a sturdier unit with even greater endurance and accessibility to moving parts.

New Models—eleven in all, including the husky MT-320 with a capacity of 32,000 BTU/HR at 10° TD and only two fans.

New Styling—modern streamlined lines blend with Larkin's own blue enamel to make a truly handsome unit.

Fully Featured—original, high-efficiency cross-fin coil with staggered tubing . . . heavily insulated non-sweat drip pan . . . rustproof aluminum case . . . airplane-type vibrationless fasteners . . . adjustable louvers . . . slotted hangar bars . . . plus the in-built quality that naturally goes with the name Larkin.

Get complete details from your wholesaler or write for bulletin 1049-A.



"Originators of the Cross Fin Coil"

LARKIN COILS INC.

519 MEMORIAL DRIVE, S.E. • ATLANTA, GEORGIA • MUrray 8-3171

'56 Refrigerator, Freezer Norge Production Schedule Up 49% Over '56; Sees 'No Retail Softness'

Distributor Sales by States Outlined by NEMA

NEW YORK CITY—The National Electrical Manufacturers Association has issued the following report on 1956 sales of electric household refrigerators and freezers by distributors to dealers, by states.

Reports on refrigerator sales were received from 10 companies; on freezer sales, from 12 companies, according to the association's Statistical Bulletin.

States	Refrigerators	Freezers
Alabama	45,694	13,533
Arizona	18,783	3,352
Arkansas	27,231	8,066
California	285,140	31,094
Colorado	26,473	6,101
Connecticut	42,255	4,106
Delaware	6,220	1,130
District of Columbia	34,499	6,169
Florida	112,026	14,604
Georgia	65,235	19,391
Idaho	7,679	3,309
Illinois	165,698	27,608
Indiana	91,723	18,713
Iowa	31,338	10,649
Kansas	31,099	6,761
Kentucky	42,141	11,030
Louisiana	53,184	16,624
Maine	11,869	2,169
Maryland	43,390	7,179
Massachusetts	82,680	4,412
Michigan	155,676	18,846
Minnesota	45,793	13,437
Mississippi	25,108	10,715
Missouri	75,415	20,672
Montana	7,904	3,228
Nebraska	20,136	5,166
Nevada	3,967	823
New Hampshire	7,389	516
New Jersey	97,822	8,207
New Mexico	11,619	3,995
New York	330,603	21,520
North Carolina	59,065	20,979
North Dakota	5,205	3,752
Ohio	160,581	26,542
Oklahoma	41,179	6,104
Oregon	21,898	7,072
Pennsylvania	181,647	26,184
Rhode Island	13,937	399
South Carolina	28,230	8,138
South Dakota	5,311	2,635
Tennessee	47,027	18,998
Texas	156,459	35,969
Utah	12,420	2,509
Vermont	4,881	911
Virginia	57,424	12,019
Washington	37,786	13,833
West Virginia	28,124	6,228
Wisconsin	53,913	11,299
Wyoming	3,070	1,077
Total U. S.	2,923,936	527,773

Participating companies: Admiral Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co. (Out 1-1-56 - In 4-1-56); Hotpoint Co., Div. of General Electric Co.; Kelvinator Div., American Motors Corp.; Maytag Co.; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; *Victor Products Corp.; Westinghouse Electric Corp.; *Whirlpool-Seeger Corp. (In 3-1-56); Crosley & Bendix Home Appliance Div., Avco Mfg. Corp. (Out 10-1-56).

*Freezers only.

The unit sales figures shown on this summary are not factory sales nor do they reflect the sales of all manufacturers. They represent distributor sales to dealers for only those participating companies listed above.

**HOW CAN YOU
GET MORE BTU'S
FROM
THE SAME
COMPRESSOR?**

Watch
the NEWS
for
more news!

Norge Production Schedule Up 49% Over '56; Sees 'No Retail Softness'

CHICAGO—Production schedules of Norge are 49% higher than at the same time last year.

Judson S. Sayre, president of this division of Borg-Warner Corp., added that manufacturing plans for the second quarter were 88% ahead of 1956 levels at three plants.

"We've scheduled production of 74% more refrigerators and freezers than last year for the Muskegon Heights, Mich. plant during this period; more than four times as many electric and gas ranges and automatic clothes dryers at our Effingham, Ill. factory; and 60% more wringer and automatic washers for our Herrin, Ill. plant."

Manpower at the three facilities has increased proportionately, Sayre said.

"Two shifts at Muskegon

Heights will produce 9,000 more units this month than last April and workers have been added at Effingham. This compares with one-shift refrigerator production last year and a generally declining employment force curve last year," he noted.

"Factory and distributor stockpiles are less than half what they were at this time last year, contributing to extreme merchandising mobility."

Sayre noted the industry feeling that a softness prevails in the retail home appliance sales pattern.

"We refuse to acknowledge this, as clearly indicated by the plans outlined above, and maintain that any softness is a transitory situation that offers a tremendous opportunity to the aggressive merchandiser."

N. Y. Puts Instalment Plan Sales Under Regulation, Controls Revolving Credit

ALBANY, N. Y.—All sales on the instalment payment plan will now come under state regulation.

Also for the first time, the new law controls so-called revolving credit systems of some department and furniture stores that grant customers a certain amount of credit provided the customers make regular monthly payments of specified size.

This measure supplements similar regulations enacted last year for motor vehicle sales, covering sales of all other goods and services.

Instalment sellers are now required to show at the time of sale the price, service charges, and rates at which they are computed, any insurance fees or other costs. The sales contract

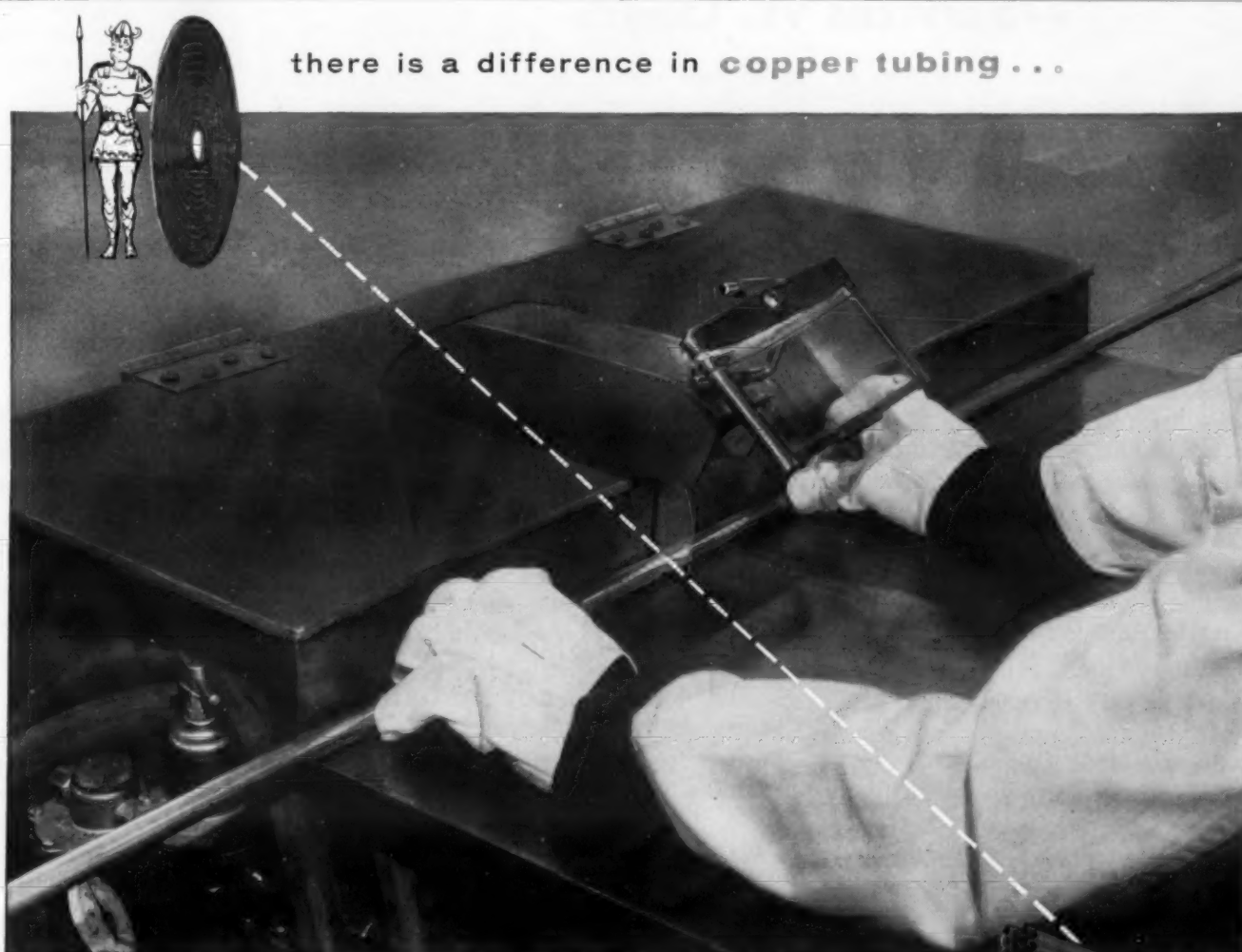
must list these separately and with a description of the goods.

Service charge on a single purchase instalment transaction up to \$500 is limited to a maximum of \$10 for each \$100 of sale price a year. Charge for goods selling at more than \$500 will be \$8 a \$100 a year. Monthly charges on revolving credit accounts are limited to 1½% up to \$500 of the unpaid balance and 1% over \$500.

Canada Ups Production

OTTAWA, Ont., Can.—An increase of over 15% in production of domestic electric refrigerators was reported for 1956, with 285,645 units produced, compared with 247,629 for 1955.

This was termed the largest yearly total since 1950.



there is a difference in **VIKING** is ...
the END that makes
a **BETTER BEGINNING**

Even the finish cut on Viking copper tubing is not just an ordinary cut . . . but a precision operation! To avoid the fabrication difficulties caused by rough, uneven ends, Viking designed a special tube cut-off saw which produces square, burr-free ends on Viking copper tubing. This makes Viking tubing immediately ready for installation . . . eliminates additional finishing costs.

In the Viking method of tube cut-off, the tubing is held square on the saw table while the saw moves carefully into the tube for the cut at a precontrolled rate of speed. Precise selection of the blade thickness, number of teeth and

speed of the saw produces a clean, even cut in either hard or soft tubing.

This attention to small details has made Viking copper tubing consistently superior in quality . . . and has developed exclusive features of construction that make it ideal for so many applications. As a result, more and more manufacturers of air conditioning and refrigeration units and coils are using Viking as a principal source of supply for thin-wall copper tubing.

Viking copper tubing will continue to be the result of the efforts of skilled craftsmen, seeking always to create tubing that will do the job better . . . faster . . . and at lowest cost!



VIKING

COPPER TUBE CO.

CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER AND ALUMINUM TUBING

EXTRA STRENGTH

The proper kind of strength and ductility is vital in tubing used for refrigeration and air conditioning purposes. VIKING copper tubing possesses these properties to a far greater degree than other types of tubing. Its temper assures flawless fabrication.

ABSOLUTE, UNVARYING STRAIGHTNESS

A battery of electrically controlled straightening machines keep VIKING copper tubing absolutely, unvaryingly straight. In addition, these machines precisely temper the tubing, imparting to it the correct surface hardness . . . assuring ease in fabrication resulting in substantial savings in time and labor.

ELECTRONIC QUALITY CONTROL

An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubing . . . automatically discarding defective tubing. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

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'The Conscience of the Industry'

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"Put it before them briefly so they will read it, clearly so they will understand it, forcibly so they will appreciate it, picturesquely so they will remember it, and above all accurately so they will be guided by its light."—Joseph Pulitzer.

**DUBS 'NEWS' INDUSTRY'S
'MOST INFORMATIVE'**Radio & Appliance Corp.
Nashville 3, Tenn.

Editor:

We would like to take a moment to congratulate you on having the most informative publication in the industry.

B. H. McLAIN

**ASKS TO REPRINT
COOLING EDITORIAL**Carrier Corp.
Springfield, Ill.

Editor:

We would appreciate having your permission to reproduce the article "Why Owners Should Buy Air Conditioning" from your issue of March 18, 1957.

JOHN R. PUNZAK

**FT. WORTH GROUP WANTS
COPIES OF EDITORIAL**Fort Worth Air Conditioning
Association
804 Weil P. Anderson Bldg.
Fort Worth 2, Texas

Editor:

We would like to secure 36 copies of the editorial, "Why Homeowners Should Buy Air Conditioning," which appeared in your March 18, 1957 issue, or permission to reprint same for information of the local population.

EDWIN D. MCCOY,
Executive Secretary**Handy Way to Subscribe****To See the Industry In Action EVERY WEEK**

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, heating, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only \$6.00 per year, 53 issues (U.S. and Canada). Foreign: \$10.00 per year.

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Name.....

Company.....

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IMPORTANT: Company's Type of Business.....

**They'll
Do It
Every
Time**

by

Jimmy
Hatlo**Fourth Factor of Competition
--Services vs. Goods**

SUCCESSFUL corporation president in our industry contributes this line of reasoning to current economic thinking:

If Mr. and Mrs. Ambitious spend a handsome pay raise on country club dues, or on a servant-maid, or a private school for Suzie—they cannot acquire home air conditioning, or a new electrical kitchen.

If they spend that increased pay check on a new car perhaps they cannot meet their obligated contributions to their church—or buy more insurance. Whether to vacation in the mountains, sun in Florida—or invest in bonds and stocks—becomes an argument in any family which fondly fondles extra income.

Chief competition for the purchase of an air conditioning unit, therefore, may be music lessons for Sally, summer camp for Jim, or a mink coat for Mama.

This "fourth factor" of competition (discretionary purchases of durable goods, services, or investments) is a puzzle.

How can you meet it—if you are selling, say, air conditioning? Answer: You can sell and promote and advertise—advertise and promote and sell—and then turn around and do it all over again.

Grasp every opportunity to advertise wisely. Take a page from the book of military strategy: Neutralize important enemy territory by continuing bombardment. Liquidate your unseen competitors through overwhelming advertising.

In the business world, there are fields of activity which cannot be engineered with precision. Therein speculation, experience, and willingness to back up an opinion with good ADVERTISING dollars make the wheels go round. That's where salesmen enter the picture—and promoters. Why? Because they know how to manipulate human emotions.

ADVERTISING separates boys from men between competitors for "disposable income." It is impossible to "engineer" the stock market, or the farmer's weather, or the time when death will strike key individuals in an organization. These are things which affect the daily business world, but which cannot be solved by scientific procedures. They can be "hedged," however, by the personal ministrations of salesmen.

A philosophical approach to selling is somewhat akin to drilling for oil. An investor may sink eight dry holes, but if the

ninth one comes in the investor profits. Likewise, investing in the soundness of experienced selling and advertising should pay off in the Big League competition for a family's choices between YOUR goods and trips abroad, etc.

Let us admit that a seller has allowed 5% of the sale price for promotion of his product. That is the degree to which he is speculating on the sale. If his risk pays off well he may earn 100% of his calculated risk. What of the other half of this transaction—the buyer's risk?

He is speculating on whether the product will produce the desired results (in terms of comparative happiness) after he has purchased it. And if the item is one which requires extensive and repeated service, he may be gambling considerably more than 100% of the purchase price.

Why does he gamble? ADVERTISING has earned his confidence.

Buyer and seller come together before either merchandise or services are purchased. Is it unreasonable to ask the seller to take 5% of the risk and spend it on advertising—if the buyer must take a risk 20 times as great?

Not at all. Adequate advertising insures both risks—because, when a firm advertises hugely, it guarantees quality.

Until someone needs a new product or service—or has been persuaded that he does—competitors don't exist. Only when a need has been in existence for awhile, and short-visioned original producers have permitted all-out ADVERTISERS to step in and preempt that market, does price competition get rough.

Saturation and competition are two concepts which are mutually exclusive.

From evidence on every hand, competition becomes more and more a reality with each passing day, and with every sale of a competitive product. What, then, of "saturation?" It's a frame of mind, rather than a fact. If you think creatively as a salesman, saturation doesn't exist. Nobody ever satisfies his wants—or that of his family—on this temperal earth. They merely shift them from one product or service to another.

ADVERTISING is the clue to who buys what when confronted by multiple choices. And it's the answer to competition.

Biggest advertisers (i.e., auto makers) have the fewest competitors. Q. E. D.

Worthington Names Sales Distribution District Managers

HARRISON, N. J.—Distribution district manager appointments arising from the newly-created Worthington Corp. air conditioning and refrigeration internal sales organization have been announced by M. M. Lawler, vice president of the Worthington Air Conditioning & Refrigeration Div., Ampere, East Orange, N. J.

Named as distribution district managers of the new air conditioning and refrigeration sales offices are: R. O. Gundlach, mid-west district with headquarters in Chicago; H. A. Caldwell, southeastern district with headquarters in Atlanta; J. A. Klai-ber, central district with headquarters in Cleveland; H. Fleit, northeastern district with headquarters in New York City; and J. S. Cavanaugh, east central district with headquarters in Philadelphia.

Gundlach joined Worthington in 1946 as a test engineer in the Harrison, N. J. research laboratory. Prior to his present appointment, he was serving as air conditioning and refrigeration district supervisor at the Chicago office.

Caldwell joined the corporation in 1948 as an application engineer. In 1956 he was named air conditioning and refrigeration district supervisor, Washington, D. C. office, the post he held until his present appointment.

Klai-ber has been associated with Worthington for 27 years. Prior to his present appointment he was serving as air conditioning and refrigeration distributor supervisor in the St. Louis district office.

Fleit joined Worthington's Buffalo Compressor Div. in 1945 and successively served at the Boston and New York District offices in supervisory capacities prior to his present appointment.

Cavanaugh joined the corporation in 1951 as district representative in the Chicago district office in which capacity he served until his present appointment.

Chase To Sponsor 2 May Educational Meetings

CHICAGO—Chase Supply Co. of Chicago will sponsor two educational meetings featuring new developments and applications of condensing units, according to John P. Glass, president.

The first will be held May 21 at 7:30 p.m. in the Eagles hall at 705 W. 119th St.; the second, at 7:30 p.m. May 22, Eagles hall, 3857 N. Western Ave.

Factory experts of Copeland Refrigeration Corp. will present the newest developments, using slides and models. Problems encountered in the field, presented by the audience, will be discussed in detail.

Among the subjects to be covered are inherent motor protection, suction-cooled motor compressors and their application, and extra low temperature (-40° application) Refrigerant-12 motor compressors.

All Chicago area contractors and service engineers are invited.

Marley Ups Christensen, Reed to New Positions

KANSAS CITY, Mo.—The Marley Co. has announced the appointment of Lyle A. Christensen, a company vice president and for 11 years general sales manager, to



F. B. Reed

the newly-created position of director of sales and advertising.

Succeeding him as general sales manager is F. B. (Frosty) Reed, who has been elected a vice president. He was formerly assistant general sales manager. John H. Bateman, technical



Christensen

assistant to the sales director, now becomes president of Marley International, Inc. and Marley Pan American, Inc., the company's export sales subsidiaries.

In his new capacity, Christensen will have over-all charge of the company's entire marketing program. He will devote much of his time to policy making and planning the company's sales effort both at home and abroad. He joined Marley in its New York City sales office in 1942 and was transferred to the home office in 1946.

Reed will have charge of all sales to industry and air conditioning markets in the United States. Since joining the company 16 years ago, he has filled several positions in the Marley sales division. He now supervises Marley sales through its 56 branch offices and sales representatives.

In announcing Bateman's appointment, the company noted

that it now has representatives or licensed manufacturers of its products in England, Australia, Mexico, and a number of South American countries. The appointment "is indicative of the company's recognition of the potential for cooling towers in these fields," it was stated.

Bateman is coordinator of the sales work of the company's present export connections and will develop new connections throughout the world.

Opens Houston Auto Conditioning Center

HOUSTON, Texas—Stahl & Myers has opened its new automobile air conditioning sales, service, and installation center at 1515 Truxillo.

The center represents an investment of about \$65,000 and it has a staff of 14 factory-trained mechanics.

The firm is headed by Sam G. Myers, president.

30° REDUCES FRESH FOOD WASTE!

and it can be done economically!

Watch the NEWS for more news!

PENN RIMSET THERMOSTAT

reduces your control inventory



ONLY ONE ROOM THERMOSTAT for all cooling, heating or any combination

With the Penn RIMSET, various sub-bases are available for cooling, heating or any combination... and, *one thermostat unit fits all*. Thus, if cooling is added later to a heating installation... simply change the sub-base and use the same thermostat!

And, the PENN RIMSET is today's easiest-to-read thermostat. When setting temperature, simply dial the rim... the extra large dial face remains stationary. Many other selling advantages are yours with RIMSET... the thermostat with the "Fine Instrument" look, quality and performance!

Use RIMSET and PENN controls for all cooling and heating jobs as well as for commercial refrigeration... a few controls from the complete line are shown, there are many more. Investigate Penn Controls... they "stay on the job" longer!

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N. Y.



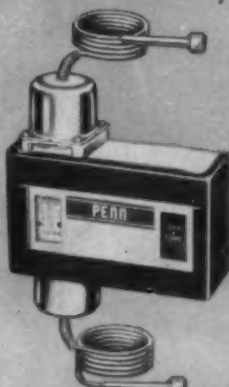
Series 246 Water Valve for all refrigerants.



Series 270 Temperature and Pressure Controls.



Series 753 Air Conditioning Control Center.



Series 275 Oil Protection Control.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

For more information about products advertised on this page use Information Center, page 32.

Efficiency Gains with Air Conditioning Cited at Government-Industry Symposium

Cost Is Small Fraction of Total Expenses, Haines Declares

WASHINGTON, D. C.—Data showing increases in employee efficiency apparently due to air conditioning and figures explaining how comparatively little it costs were detailed in a discussion of "Economics of Air Conditioning" presented before the recent government-industry symposium here by John E. Haines, vice president, Minneapolis-Honeywell Regulator Co. "More people have changed the question 'what will air conditioning cost?' to 'what will it cost to be without air conditioning?'" Haines told the symposium, which was arranged jointly by the Business and Defense Services of the U. S. Department of Commerce and industry groups.

Admitting that "there is very little sound scientific data to prove the percentage increase in office and factory workers' efficiency and productivity, or the speed of recovery of hospital patients, or the improvement in the learning of students through the use of air conditioning," Haines did, however, cite several examples which seem to prove this point.

Cites Examples

"The Detroit Edison Co.," he said, "made an efficiency study in their drafting room a few years ago. Without air conditioning, 8,988 work units required 5,008 man-hours. Following the installation of air conditioning, 10,474 work units required only 3,872 man-hours, indicating an increase in efficiency of 51%."

"Our Federal government conducted a stenographic test in 1946 when stenographers typing triangulation data worked two weeks in a non-air conditioned space and when then transferred to an air conditioned space. Using the same typewriters, their output increased 24%," Haines commented.

"C. F. Braun & Co., oil refinery and chemical manufacturer, moved into a new building with

air conditioning, and they reported a 35% increase in the efficiency of 575 white collar workers. However, some of this increase may have been due to better lighting and improved space arrangement," he pointed out.

"John Hardy & Son, manufacturer of nylon hosiery at Pulaski, Tenn., reported a 29% increase in production after installing air conditioning. The knitting machines required less maintenance, and maintenance costs dropped 80%."

"A survey of 75 manufacturing plants in the New York City

area indicated that 100 days in each year are so hot or humid that employees either slow down or stop work entirely during part or all of the day, and that an average of \$108 in wages is lost each year for each employee working in a non-air conditioned building. Plant absenteeism dropped 25% to 30% after the installation of air conditioning, turnover in personnel was reduced, cleaning costs were lower, and productivity increased," Haines declared.

"The Aluminum Co. of Canada reported a sharp drop in absenteeism and rate of turnover among employees after air conditioned rooms were used where the employee could rest at regular intervals.

"The Elgin National Watch

Co. reported that their rework decreased 25% after they added air conditioning and that employee efficiency increased.

Sees Scientific Proof Soon

"I believe that in the near future," Haines predicted, "scientific data will be available which will permit us to predict in advance the increased efficiency and productivity of workers, the improved recovery of hospital patients, and the improvement in the learning of students through the use of air conditioning."

According to Haines, "today doctors know that the individual control of the hospital room environment will help a patient recover more quickly. Some patients need warm and humid rooms while others need cool and dry rooms, depending upon the illness.

"Considerable progress has been made in using air condi-

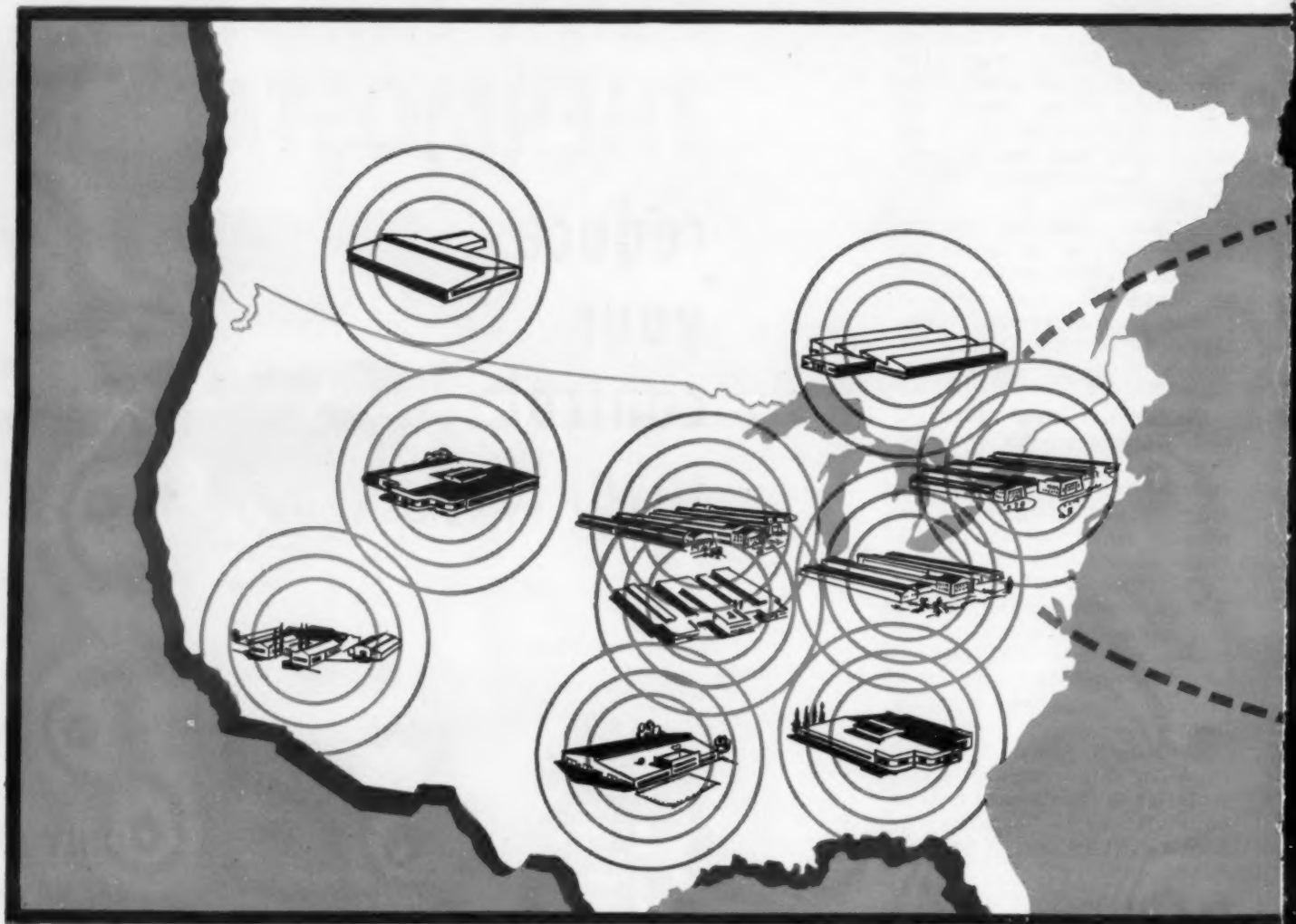
tioning in treating allergic disorders, such as hay fever and pollen asthma, as well as other diseases, and for heat and cold therapy," he added.

"In treating patients with rheumatic arthritis, a hot, dry environment of 90° and 35% relative humidity has proved to be desirable. Nurseries should be maintained at about 85° and 60% relative humidity.

"The Health Dept. in New York City reported that during the hot spell in the summer of 1955, from July 3 to July 9, the death rate in the city was 40% above that of the corresponding but much cooler week in 1954," Haines said. "The average temperature in 1955 was 82° with highs up to 100°, and it was 71° in 1954 with highs up to 85°."

"Today more than half of the hospitals in the country have air conditioning in some form in some area. Within a few years

(Continued on next page)



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FRESH FOOD
FRESH!**

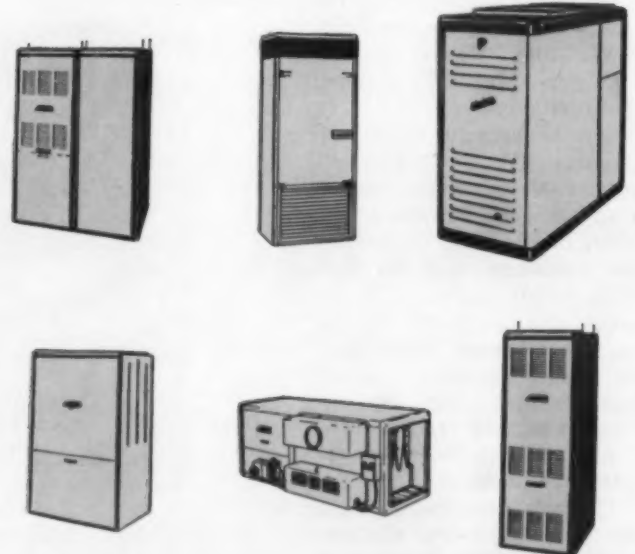
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can be done
economically!

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NEWS
for more
news!



When you handle the Lennox line (127 models), you have the answer to every installation problem. And the finest technical schools in the industry keep your personnel "in the know"—ahead of competition.

**Year 'round indoor climate...
made in your territory
for your customers' needs**



Efficiency Gains with Cooling--

(Continued from preceding page) all modern hospitals will be completely air conditioned," he asserted.

"Educators know that students learn more quickly in environments which are properly controlled, and this is particularly true of children who may learn to read twice as fast in classrooms at 70° than at 80°.

"We are building many schools, as we should, all over the country," Haines continued. "Every effort is being made to reduce the cost of these schools, even to the extent of eliminating those things which are teaching aids.

"And yet, it is not generally known that only 10% of the expense of operating a school system is spent on the construction and maintenance of the school building. A reduction in the

cost of the building and its facilities may very well increase the subsequent cost of the school system and reduce the value of the possibilities for learning," Haines cautioned.

Predicts More School Cooling

"We are going to see more air conditioning in schools as parents and the public appreciate the importance of air conditioning as a teaching aid and as they learn that air conditioning will add very little expense to the over-all cost of education. Also," he said, "the trend is toward the year-round use of schools, either as classrooms or for other community purposes."

In discussing specifically the problem faced by Federal officials in justifying air conditioning on an economic basis, Haines declared that several

factors enter into the picture:

"1. The economics of installing complete air conditioning in both new and existing buildings.

"2. The economics of personnel turnover and training problems.

"3. The economics of initial cost versus the cost of owning and operating an air conditioning system.

"If you are to retain your trained civil service personnel, the competitive aspects of commercial firms must be considered. Working conditions are an imposing factor today and we see many firms exploiting the fact that 'complete air conditioning may be enjoyed by the prospective worker,'" Haines said.

"Training replacement personnel is a costly process and I understand that many of your departments find four to seven months are required as a minimum to train a new employee.

"Even though our study of

the economics of air conditioning has not been completed, we have enough information which can be presented now for your guidance in Federal building work.

3 Types of Buildings

"For this symposium, we have selected three types of buildings, which are hospitals, industrial areas, and office spaces. In the following, the cost of a new building is based upon today's construction costs:

"The cost of an existing building is based upon one-half of today's construction costs.

"The insurance and taxes for commercial buildings are estimated at 2% of the original construction costs except that for public buildings such as hospitals and Federal buildings no tax cost is included and the insurance is estimated at 1%.

"The air conditioning cost is based upon a central fan system with a 20-year life, as

recommended by the ASHAE Guide, with 5% of the original cost added for interest and 2% for insurance and taxes. Again, only 1% is added for public buildings.

Costs Cover Cooling Only

"The air conditioning costs do not include the heating costs nor the cost of the heating equipment because we are attempting to compare the additional cost of year-round air conditioning beyond the cost of a conventional heating system.

"These costs are also based only upon outside wall areas. If there are interior areas, then the cost of air conditioning would be less than the estimates shown," Haines explained.

"These are average air conditioning costs which have been prepared with the assistance of Carrier Corp.

"First, let's take a look at the economics of air conditioning in the patients' area of a hospital. This is the area in a hospital where the economics of air conditioning is usually questioned.

"I would like to emphasize again that these are average costs based upon recent experience in all parts of the country and that these estimates may vary somewhat with the design and geographical locations of buildings," he pointed out.

"In a new hospital, the annual cost per square foot of owning and operating the patients' area, including the heating, is \$8.66 or 13.7% of the total cost.

"Equipment and supplies account for 41.7% of the total cost at \$26.28 per square foot per year.

"The payroll in the patients' area is the largest expense, and it amounts to \$26.94 annually per square foot or \$42.8% of the total cost," he said.

Operating Cost 1.8% of Total

"The additional cost of owning and operating a complete and flexible air conditioning system in the patients' area, which is operating 24 hours per day, seven days per week, is \$1.16 per square foot per year or only 1.8% of the total cost. This is 4.3% of the payroll, which means that if the efficiency of those people on the payroll in the patients' area is increased 4.3%, air conditioning will pay for itself. There are, of course, other benefits such as the probable more rapid recovery of patients, lower cleaning costs, etc.

"Now, if a less than complete air conditioning system is installed in the patients' area, we might assume that the first cost is reduced by 20%. In this case, the cost of owning and operating the patients' area, the cost of equipment and supplies, and the payroll remains the same.

"However, the cost of owning and operating an air conditioning system in the patients' area is reduced by only 14 cents to \$1.02 per square foot per year, and this amounts to 1.6% of the total cost instead of 1.8%. In other words, the total cost would only be increased .2% to install a complete and flexible air conditioning system," Haines emphasized.

"In an existing hospital, the
(Concluded on next page)

another secret of Lennox success!

LENNOX factories all over America mean Closer Dealer Relationship for Greater Profit

Most of the extra advantages of handling Lennox are rooted in the direct factory to dealer relationship. There's no middleman distributor or jobber to skim off the profits... and as a result, you're on a friendly *personal* relationship with the folks at the factory. One of the first things you'll notice is the practical cooperation—the way the nearby factory people consider you as a "partner" rather than an account on the books.

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Salt Lake City, Utah • Los Angeles, Calif. • Decatur, Georgia • Des Moines, Iowa
Lennox Industries (Canada) Ltd.—Toronto, Montreal, Calgary and Vancouver

Efficiency Gains with Cooling--

(Concluded from preceding page)

cost of owning and operating the patients' area would be \$8.30, equipment and supplies \$26.33, and the payroll remains at \$26.94 per square foot per year.

"The additional cost of owning and operating a complete air conditioning system in the patients' area would be \$1.26 per square foot per year or 2% of the total cost.

"The increased efficiency required for air conditioning to pay for itself would be 4.7%," he pointed out.

"If a less than complete air conditioning system is installed at a first cost saving of 20%, the cost of owning and operating would be reduced to \$1.10 per square foot or 1.8% of the total cost.

"Here again, the complete and flexible system only in-

creases the total cost by .2%," Haines said.

Covers 'Typical' New Industrial Building

"In a typical new industrial building, the cost of owning and operating the building is \$1.83 annually per square foot, which is 4% of the total cost. Equipment and supplies amount to \$7.05 or 15.5% and the payroll \$36.10 or 79.5% of the cost.

"The additional cost of owning and operating a complete year-round air conditioning system which is operating 10 hours per day would cost only 47 cents per square foot per year or 1% of the total cost.

"This means that if the efficiency of the workers in the industrial building is increased only 1.3%, the system will pay for itself.

"If a less than complete air

conditioning system is installed at a first cost saving of 20%, the cost to own and operate the system will be 42 cents or .9% of the total cost. In other words, a complete system only increases the total owning and operating costs by .1%.

"In an existing industrial building, the additional cost of owning and operating a complete air conditioning system would be 58 cents annually per square foot, which is 1.3% of the total cost and 1.6% of the payroll.

"If a less than complete system is installed at a first cost saving of 20%, the owning and operating cost per square foot will be 50 cents, which is 1.1% of the total cost.

"Here again, an increase of only .2% in the total cost would provide for a complete and flexible system," he said.

"In a typical new office building, the cost to own and operate the building, including heat-

ing, is \$3.03 annually per square foot or 4.2% of the total cost. Equipment and supplies amount to \$2 or 2.8%, and the payroll \$66 or 92.3% of the total cost.

Operating Cost .7% of Total

"The additional cost of owning and operating a complete and flexible air conditioning system which is operating 10 hours per day would be 53 cents annually per square foot, which is .7% of the total cost.

"If the efficiency of the people in the office building is increased only .95%, the air conditioning will pay for itself.

"If a less than complete system is installed at a first cost saving of 20%, the annual cost per square foot would be 46 cents, which is .6% of the total cost. The addition of only .1% in the total cost would pay for a complete and flexible air conditioning system.

"In a typical existing office building, the cost to own and operate the building is \$2.68 annually per square foot or 3.8% of the total cost.

"Equipment and supplies amount to \$2 and the payroll at \$66 per square foot.

"The additional cost of owning and operating a complete air conditioning system would be 65 cents annually per square foot, which is .9% of the total cost.

"In this case, an increase of efficiency of the people in the office of only .99% would pay for the additional cost of complete air conditioning.

"If a less than complete system is installed at a saving of 20% in the first cost, the annual owning and operating cost would be 55 cents per square foot or .8% of the total cost. An increase of only .1% in the total cost would provide for a complete and flexible air conditioning system."

In this connection Haines commented that "we believe that there are less than complete systems of all varieties being specified for Federal buildings, and ask that some studies be made to standardize

these specifications for all government agencies and that quality and long life standards be established.

"In military construction, the Air Force efforts to provide quality air conditioning are most commendable. Air Force Regulation 91-8 defines the boundaries for air conditioning by type of structure, climatic conditions, and type of system," he said.

"We find that base theaters, clubs, hospitals, technical, industrial, and operational buildings in certain climate areas may be air conditioned.

"Military housing, a vital segment of military life and morale, however, does not receive the blessing of air conditioning. So our important technical personnel, in all branches of service, do not have a climate for proper rest.

"Our pilots in the Tactical, Air Defence, and Strategic Air Commands must be ready at any hour to protect and defend our nation—a 24-hour alert, 365 days, year in, year out.

Economics of Cooling Officers' Quarters

"Would economics show us how air conditioning can pay for itself in this area? Let us look at a typical bachelor officers' quarters.

"In such a typical building, with 10,000 sq. ft., housing for 50 officers is provided. We find that the cost of owning and operating the building is \$2.40 annually per square foot, equipment and supplies cost \$1.80, salaries amount to \$27.50, and complete air conditioning 51 cents per square foot.

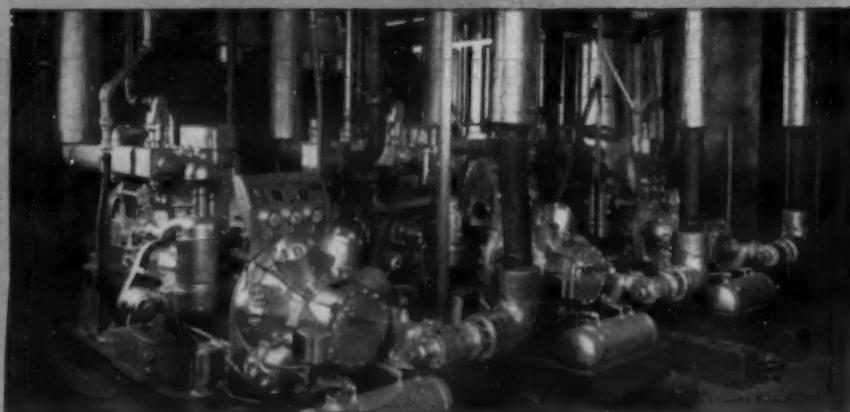
"We see, therefore, an improved efficiency of 1.9% is needed to pay for complete air conditioning for this B.O.Q.

"The retaining of trained technical personnel and pilots is important economically to the Department of Defense," Haines emphasized. "Jet pilot training costs us \$120,000 per man. Recruiting costs for all services is \$44,000,000 annually. Infantry training costs \$3,200 per man."

give your customers Ready-Power

NATURAL GAS air conditioning

economical
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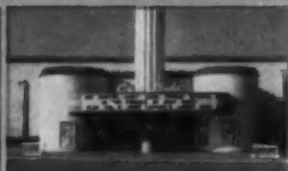
For Office Buildings



For Restaurants



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For Theaters

Call for Ready-Power Natural Gas Air Conditioning Units and give your customers the advantages of air conditioning at its best. Designed and engineered to operate efficiently on economical natural gas, Ready-Power Air Conditioning Units give controlled summer temperature and humidity at lowest operating costs known.

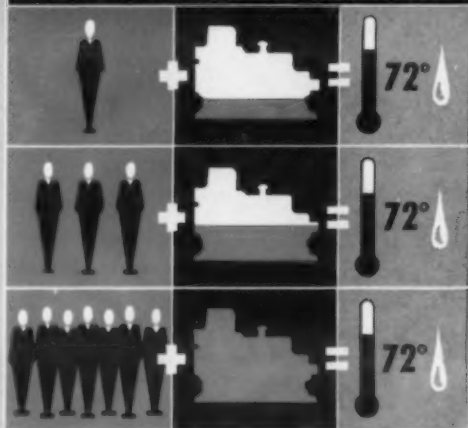
Ready-Power Units feature a unique system of capacity modulation which permits continuous operation of the compressor at variable speeds. Cooling rate and power requirements automatically adjust to changing load conditions. Temperature and humidity variations common to "on and off" systems are eliminated. Ideal for theaters, restaurants, motels, hospitals, churches and store and office buildings where latent and heavy sensible loads must be met.

Ready-Power Air Conditioning Units are available up to 76-ton capacity, and

many multiple unit installations of more than 150-ton capacity have been operating for years. Units are designed to operate with chiller or direct expansion equipment. Pre-engineered Chiller Packages, available through Ready-Power, simplify and speed installation of complete air conditioning systems.

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Manufacturers of Gas and Diesel Engine Driven
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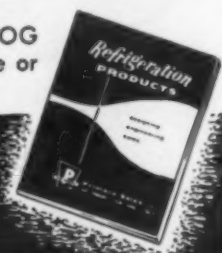
- for Household and Commercial Refrigeration
- for Residential and Automotive Air Conditioning
- for Home and Commercial Freezers
- for Condensers, Evaporators and Receivers
- for your Special Refrigeration Application



Every Primore valve has many years of refrigeration and air conditioning know-how behind it. They're precision manufactured, yet, because of hydrogen brazed steel construction and high volume production are lower in cost.

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NEW COMPACT Airtemp auto air conditioner mounts under center of the instrument panel. Condenser and compressor are placed under the engine hood for the unit which is priced at about \$295 retail installed.

Airtemp Sees 450,000 Auto Air Conditioners Sold In '57; Plans Marketing of Low-Cost Unit

DAYTON—Plans for mass marketing of a new low-cost car air conditioner are being announced by Airtemp Div. of Chrysler Corp.

J. F. Knoff, vice president of sales, in disclosing development of the new car conditioner, stated:

"Car air conditioning has now come into its own. It is anticipated that industry sales for 1957 will reach an all time high of some 450,000 cars equipped with cooling."

Improvements in design and engineering have greatly simplified car air conditioner installation, it was pointed out. The compact new Airtemp model mounts under the center of the instrument panel; condenser and compressor under the hood.

"Priced to retail for about \$295 installed, the conditioner assures comfort for driver and occupants by means of two simple controls," the announcement said.

"One control regulates amount of cooling desired; the other permits selection of either high or low speed. When cooling is not needed, a magnetic clutch disengages automatically and the unit's compressor stops operating."

"Three adjustable grilles enable occupants to direct the flow

of conditioned air as they desire for greatest comfort.

"A primary sales objective is to make the new product available to every car owner in the country through local Airtemp distribution channels. Distributors and dealers are currently being franchised to sell, install, and service the air conditioner."

'Clima-Pac' Conditioner Highlights Unveiling Of Peerless, Round Oak Heating, Cooling Line

INDIANAPOLIS—The 1957 lines of the "Peerless" and "Round Oak" heating and cooling equipment were introduced to approximately 300 dealers and distributors at the Peerless Corp.'s 4th annual "Peer'n'-Round" conference here recently.

Addressing the group, Oz Mutz, sales manager, said the line "has no gaps in either the cooling or heating lines. We have a furnace for every job right up to 250,000 B.t.u.," he stated.

The highlight of the meeting was unveiling of the new "Clima-Pac" air conditioner, a waterless unit designed for a variety of installations—attic, crawl space, basement, or first floor. Also shown was a new prefabricated duct system for

the "Clima-Pac," it was pointed out.

Sales emphasis for the new air conditioners will be put on variety of installation possible and also the "out-of-the-way" feature affording maximum economy of living space.

In predicting increased air conditioner sales, H. W. Mutz, Peerless vice president, pointed to lower "installed cost" and the search by home builders for new sales features.

Also introduced were the "Clima-Twin-Aire" and "Clima Twins," and the "Clima-Pump."

The group heard talks by Prof. Bill Miller, professor of engineering, Purdue university, and George Diener, public relations counsel, among others.

Miller's talk on proper sizing of cooling equipment empha-

sized that undersizing is preferred to oversizing. The advantage of undersizing, he pointed out, is that machine should run constantly to keep humidity to a low level. A temperature of 82° F., with 35% relative humidity, he explained, is much more comfortable than 75° with 70% relative humidity.

Diener stressed setting up a budget and an organized plan of advertising and promotion. He discussed at length, advertising mats, direct mail, and radio-TV advertising.

Included in the business of the conference was selection of a customer council, chosen purposely to give a good cross-section of the country. Objective of future conferences, according to Oz Mutz, will be to air problems of members in various areas and give advice, and to help steer the company in the right direction.

The meeting closed with a tour through the Peerless plant.



You'll find this advertisement a convenient reference. Clip it now, and post on your shop wall.

There's a "Genetron" Super-Dry Refrigerant for your every need. They're available everywhere—see your wholesaler!

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genetron 12	WHITE LABEL	DICHLORODIFLUOROMETHANE
genetron 22	GREEN LABEL	MONOCHLORODIFLUOROMETHANE
genetron 113	PURPLE LABEL	TRICHLOROTRIFLUOROETHANE
genetron 114A	DARK BLUE LABEL	DICHLOROTETRAFLUOROETHANE



genetron department

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

For more information about products advertised on this page use Information Center, page 32.

Pressure Temperature Chart

Vapor Pressure—psig

Red Figures= inches of mercury vacuum

Temp. °F	genetron				Temp. °F	genetron			
	11	12	22	113		11	12	22	113
—50	28.9	15.4	6.0		55	9.9	52.0	93.3	22.0
—45	28.7	13.3	2.6		60	7.7	57.7	102.5	21.0
—40	28.4	11.0	0.6		65	5.3	63.8	112.2	19.9
—35	28.1	8.4	2.7		70	2.6	70.2	122.5	18.7
—30	27.8	5.5	5.0	29.3	75	.1	77.0	133.4	17.3
—25	27.4	2.3	7.6	29.2	80	1.6	84.2	145.0	15.9
—20	27.0	0.6	10.3	29.1	85	3.2	91.8	157.2	14.3
—15	26.5	2.4	13.3	28.9	90	5.0	99.8	170.1	12.5
—10	26.0	4.5	16.6	28.7	95	6.9	108.3	183.7	10.6
—5	25.4	6.7	20.2	28.5	100	8.9	117.2	197.9	8.6
0	24.7	9.2	24.1	28.2	105	11.1	126.6	212.9	6.4
5	24.0	11.8	28.3	27.9	110	13.4	136.4	228.7	4.0
10	23.1	14.6	32.9	27.6	115	15.9	146.8	245.3	1.4
15	22.1	17.7	37.9	27.2	120	18.5	157.7	262.6	0.7
20	21.1	21.0	43.3	26.8	125	21.3	169.1		2.2
25	19.9	24.6	49.0	26.3	130	24.3	181.0		3.7
30	18.6	28.5	55.2	25.8	135	27.5	193.5		5.4
35	17.2	32.6	61.9	25.2	140	30.8	206.6		7.2
40	15.6	37.0	69.0	24.5	145	34.4	220.3		9.2
45	13.9	41.7	76.6	23.8	150	38.2	234.6		11.2
50	12.0	46.7	84.7	22.9					

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super-dry refrigerants



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The "Genetron" pressure temperature chart above is also available—free—as a handy pocket-size plastic card, for ready reference on the job. Ask your "Genetron" wholesaler for yours.

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On The Market Today

Because of improved production techniques, we make the lowest priced, quality, heavy duty dryer available. HI-DRI's performance tops or equals that of any other dryer. HI-DRI has all the same qualities... all brass shell, PA-400 silica gel, brass outlet screens, seams silver soldered, 100% guaranteed, but... is lower priced. Increase your profits by using Wabash. Write for information today.

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Generator Cooling Water Provides Heat Pump Heat Source To Install 12 Cooling Towers For Year-Round Conditioning of Hydroelectric Powerhouse For 1,200-Ton Indoor System

PORTLAND, Ore.—A heat pump installation using Columbia River generator cooling water as a heat source will provide year-round air conditioning for the hydroelectric powerhouse at the new Dalles Dam in Oregon.

Selection of the heat pump for the application, according to U. S. Army Engineer authorities, was based on successful results achieved by a sister installation, reportedly the first of its type, in operation for over a year at McNary Dam near Umatilla, about 200 miles above Portland and 130 miles from The Dalles.

Scheduled for completion in 1960, the Dalles Dam project will cost an estimated \$260,000,000. It will be 8,700 ft. long, 280 ft. high, and back water up 31 miles. The powerhouse alone will be two-fifths of a mile in length.

UNITS TO PROVIDE 500 TONS OF REFRIGERATION

Principal components for the heat pump system will be three 150-hp. "CenTraVac" hermetic centrifugal refrigeration units manufactured by The Trane Co. Approximately 500 tons of refrigeration or 144 million B.t.u. of heat in a 24-hour period will be provided by the Trane system at full capacity, it was reported.

Design temperature for the generator room at the dam is 50° F., and 70° for the remainder of the powerhouse.

INITIAL START-UP IS MANUAL

Initial start-up of the heat pump system is manual, with the operator determining the number of hermetic centrifugals to be run at a given time. The operator will vary the machines running to equalize total hours of operation for each. Once operating, an outside anticipator control will automatically shut down the units when no heating or cooling is necessary, and start them up again when conditioning is required.

On the heating cycle, river water will be used first to cool 14 gigantic generators at the dam. In doing so, the water will

pick up heat caused by friction, windage, and electrical losses. The 66° water will then be sent to the CenTraVacs where the heat will be removed and delivered to air handling units from the condensers at 105° F.

On the cooling cycle, river water is brought through the CenTraVacs, picks up the powerhouse heat, and is carried away.

Two four-way valves change water flow when changeover is made from heating to cooling, or conversely, from cooling to heating. Each CenTraVac has a discharge water temperature controller for the machine's condenser and evaporator. During the times when heating is needed, the condenser discharge controller will have command of

the compressor's variable inlet vanes. On the cooling cycle, the evaporator discharge controlled will dictate vane settings.

Ventilation air for the air conditioning system will be supplied by two central fan, coil, and electrostatic filter systems. The building will be kept under a positive pressure by venting through dampered pressure relief vents.

Construction of the Dalles Dam, which is proceeding on schedule, was authorized by the Flood Control Act of 1950. The project is part of a comprehensive plan for development of water resources of the Columbia River and tributaries.

Included in the construction will be a ship lock, gated spillway, and 14-unit powerhouse.

KANSAS CITY, Mo.—Half of an order of 12 100-ton cooling tower units to supply cold water for condenser cooling in a 1,200-ton air conditioning system being installed in an automotive equipment manufacturing plant has been shipped from the Marley Co. plant at Louisville, Ky.

Four 100-ton three-tower units will be located in equipment rooms with discharge air being vented through the roofs, Marley explained. It is believed that this will be one of the country's largest indoor cooling tower installations.

Redesigned this year, this line of towers now has motors mounted inside, drift eliminators are claimed to be more efficient, and a new combination mechanical equipment support

and water distribution piping assembly is utilized, the company pointed out. All models are shipped completely assembled.

Packaged design used in Marley "Double-Flow Aquatowers" is said to permit simple and economical installation.

The unit "just needs piping in and wiring," the company explained.

10 of 17 Oldsmobiles In Kansas City Area Cooled

KANSAS CITY—Ten out of every 17 Oldsmobiles now being ordered in this area are equipped with air conditioning, Jack F. Wolfram, vice president of General Motors, reported recently.

NOW! General to air condition stores, offices,

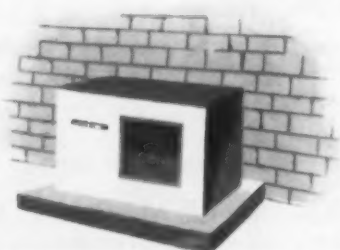


ZONE-BY-ZONE METHOD IS PRACTICAL, LOW-COST ANSWER FOR FACTORIES...OFFICE BUILDINGS...ALL LARGE INSTALLATIONS

Makes it possible to air condition entire factories, institutions, offices and office buildings. No major alterations necessary—no serious interruption to business—no large initial outlay for

customer. User gets flexible zone-control—individual operation of units. Ceiling-mounted units take no floor space—compact, floor-mounted units take very little.

REMOTE CONDENSING UNITS...USE NO WATER...IDEAL FOR SMALL STORES AND OFFICES...LOW COST INSTALLATIONS



For remote application, the ideal solution is provided by a new, low-cost General Electric Air-Cooled Condensing Unit used with General Electric Air-Handling Unit. Weatherproof Condensing Unit may be stationed anywhere—on roof, in attic, in basement, on outside slab or shelf.

Here, for example, is a General Electric Remote Condensing Unit mounted on an outside slab.

SOME VEGETABLES HAVE A SMALLER BTU LOAD AT 30°!

Watch the NEWS for more news!

Sees Spread of Electric Heating

Year-Round Air Conditioning Expected
To Up Utilities' Load Characteristics

CHICAGO—Will the growth of residential air conditioning take electric heating out of the low electric rate areas and spread its use to all parts of the nation?

That could very well come about—with a little more promotion on the part of the electric utilities, William R. New, supervisor of the special studies section, Division of Power Utilization, Tennessee Valley Authority suggested at the American Power Conference here recently.

"In the long run," he told the power engineering attending the conference, "the most desirable load from the utilities' standpoint will be the year-round air

conditioned residence."

As the year-round air conditioning concept grows, he indicated, the effect of adding electric heat on a system's transmission and generation facilities is minimized.

"Even now, proper promotional effort should make it possible to obtain a desirable balance between the winter and summer loads," he said.

"Although electric heat is a highly seasonal load, that portion subject to daily temperature variation seems to be declining on a per consumer basis. This unexpected improvement in load characteristics is important.

"Since this apparently stems

from increased non-heating use, the year-to-year stability of the load may be improving. With the average demand component of the load dropping faster than the energy component, the load factor is improving.

"A continuation of these trends in the future should make lower heating rates possible. Already costs per kwh. are usually lower and at worst no higher than for other types of residential service," New continued.

"While electric heat has seen its greatest growth in low rate areas, its advantages are such that it can spread throughout the nation. The application of reasonable rates without restric-

tions will greatly facilitate promotional effort.

"The potential utility load from residential electric heat staggers the imagination. Based on our experience, if the nation as a whole had the same saturation of electric heat as found in the TVA service area, national residential sales would increase 75% and 35 to 40 million kw. of system capacity would be needed to supply the additional load.

"Energy sales would increase even more if these customers became truly all-electric by using year-round air conditioning.

"If electric heat is discouraged, the cooling load—which will probably be added anyhow—will still require the construction of much of this potential heating capacity.

"You might say that a 14% saturation of electric heat will take quite some time to achieve. Perhaps so, but the Tennessee

Valley has seen the saturation of heating consumers reach this level in just 10 years from a starting point of 2%...

"Certainly consumer cost has been a consideration," New concluded, "but I believe you will find that in the last decade the most important factors in selling electric heat have been convenience and superior heating results.

"In other words, a better product has been developed. History shows that the American public is willing to pay more for something better," New concluded.

Dowagiac Briefs Dealers On New Heating, Air Conditioning Equipment

DOWAGIAC, Mich. — Dealers and engineers from five mid-western states recently viewed, tested, and were briefed on Dowagiac Steel Furnace Co.'s new line of heating and summer air conditioning units at a dealer school here.

Introduced to the Dowagiac line for 1957 were models GLB-110 and GLB-130 gas-fired, and OLB-95 and OLB-112 oil-fired furnaces. In addition, model BEU-3 3-ton evaporator blower cooling unit was shown.

Over 130 Michigan, Illinois, Indiana, and Ohio dealers attended the two-day school in the local Civic Center, Graham Woodhouse, president of the firm, disclosed.

Nearly every phase of manufacturing, sales, accounting, and other procedures from the first step in production to delivery and completion of the transaction was explained to dealers, Woodhouse commented.

A banquet was held in Champs' hotel with special guest, Glen Speidel, partner in the Lawrence Scudder firm of accountants, discussing dealer aids in accounting methods.

A tour of company plants was conducted under supervision of Anthony Frontczak, superintendent. Frank Parker, sales manager, talked on heating and air conditioning equipment, and conducted a question-and-answer program for the dealers. Arthur Wick, secretary-treasurer, discussed advertising, selling, and prospect development, it was noted.

Revcor Adds Plant In Carpentersville

CARPENTERSVILLE, Ill. — John Reichwein, president of Revcor Co., announces that this manufacturer of blower wheels, blades, and housings is adding 18,000 sq. ft. to present facilities.

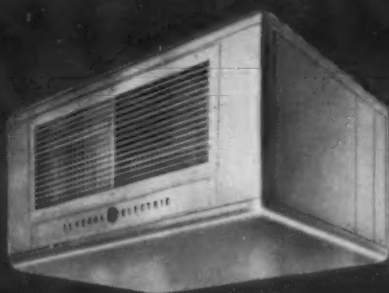
The new plant is being located at Carpentersville. Reichwein said the addition will double present production capacities and will house production line facilities, engineering offices, and a shipping room. It will have facilities for research and testing equipment.

Robert McCall, sales manager, expects that with this increase in production facilities there will be additional men added to the sales force coupled with an increase in the advertising and sales promotional program, it was indicated.

Electric makes it easier than ever factories...any size...any budget!



REMOTE CONDENSING UNITS. Air-cooled—weather-proof—for remote installation indoors or out. For use with or without condenser air ductwork. Capacities: 3, 4 and 5 tons.




AIR-HANDLING UNITS. For use with or without ductwork in conjunction with remote condensing units. Attractive cabinet includes blower, evaporator and filters. Small size, light weight provides easy installation.

GENERAL ELECTRIC'S GOLDEN GATE PLAN MAKES IT EASY TO DO BUSINESS!



General Electric helps contractors land big slices of business through the profit-building Golden Gate Plan—nine golden keys to profits that give General Electric contractors tremendous advantages in a billion-dollar business...

1. Industry's most famous trade mark... 
2. Most flexible selection of products: Floor- and ceiling-mounted units; air- and water-cooled.
3. Famous 5-year warranty.
4. Comprehensive sales training course.

5. General Electric's Selected User Plan—a seasonal sales plan.
6. National Account Sales Plan—helps you make local sale to national companies.
7. Powerful national advertising—hard-hitting sales promotion.
8. Special finance plans for you and your prospects.
9. Unique "Sell-a-Pac" Kit—helps retail salesmen close more sales faster.

See your General Electric Distributor for details. General Electric Co., Commercial and Industrial Air Conditioning Dept., 5 Lawrence St., Bloomfield, N. J.

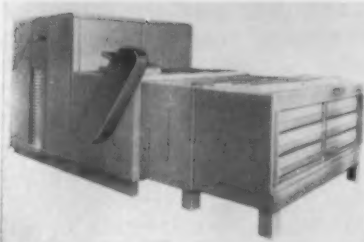
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In Canada, Canadian General Electric Co., Ltd., Montreal

For more information about products advertised on this page use Information Center, page 32.

What's New



Cabinet Central Unit Offered In 5 Sizes

—KEY NO. G-520—
HARRISON, N. J.—A new central station cabinet-type multi-zone air conditioning unit has been announced by Worthington Corp.

Available in five sizes, ranging from 4,060 to 19,200 c.f.m., the new self-contained year-round air conditioning units offer as many as 56 coil combinations and are capable of air conditioning up to 16 separate zones, it was stated.

The new units circulate, heat and cool, humidify, dehumidify, and clean the air. They consist of a fan section, coil section with

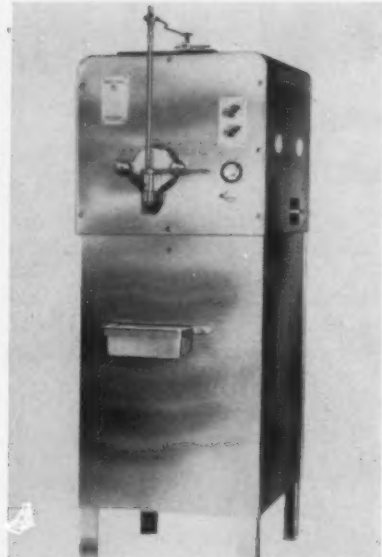
heating and cooling coils and/or humidifier, diffuser and damper section, filter box and/or mixing box.

Particularly applicable to installations where a number of zones need individualized temperature control due to differential heat loads, the flexible design of the new units permit them to meet any combination of the following heating and cooling requirements: 1. Cooling only. 2. heating only. 3. cooling and ventilating. 4. heating and ventilating.

Introduces Soft Ice Cream Freezer

—KEY NO. G-521—
CHICAGO—Less than 2 sq. ft. of floor space is claimed to be needed by newly-introduced model 925 soft ice cream freezer by the manufacturing firm Freez-King Corp.

Embodying portion control automatic mix feed, the maker says the unit has speed of refrigeration and recovery and simplicity of operation and maintenance.



In addition, Freez-King designed a twin model, 975, that features two freezers in one cabinet. It has two motors, two compressors, and two mix reservoirs, permitting the serving of two different flavors where desired at double capacity, the manufacturer stated.

Develops Electric Hot Gas Defrost

—KEY NO. G-522—
UNION, N. J.—Development of a new electric hot gas automatic defrost was recently announced here by Tenney Engineering, Inc. Dubbed the "TEH-Defrostolator," this automatic unit combines simplicity of electric defrosting with frost removal efficiency of hot gas, the company claims. Completely self-contained, no additional parts are required for multiple unit installation. No added inventory is necessary for maximum coverage of capacities, all parts are standard, the firm noted.

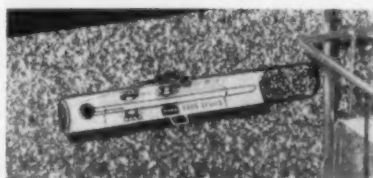
Completely independent of the condensing unit, the model produces hot gas electrically and circulates it by a simple natural cycle. Hot gas is produced by the same refrigerant which is used in normal refrigeration, the company said. There are no restrictions as



to location of the condensing unit. Application of a time clock to start the defrost and a pressure control for termination gives positive defrost under any frost accumulation, it was explained.

Five models are now available ranging in capacity from 3,700 to 17,800 B.t.u.h.

'Automagnet' Thermometer Can Be Positioned



—KEY NO. G-523—
HIGHLAND PARK, Ill.—A new thermometer for use in home refrigerators and freezers, equipped with the new "Automagnet" clip that holds firmly to any metal surface, permitting the thermometer to be positioned at any convenient reading point away from

the food storage shelves has been introduced here by Park Magnets.

The "Zero-Zone" allows a constant check on the efficiency and operation of the refrigerator unit. Also it has been demonstrated that maintaining the proper preserving temperature insures the quality of the food being stored.

The Zero-Zone consists of an extremely sensitive thermometer mounted on an easy-to-read scale designed for both freezer and refrigerator use. Enclosed in a glass tube, the unit is fully protected and guaranteed to operate accurately in all home freezers.

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MONEY and A FULL MARK-UP FOR
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Gloekler Walk-In Cooler
Steel Clad Add-to
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As a pioneer designer and builder of commercial refrigerators with more than 50 years of experience, Gloekler offers these important advantages:

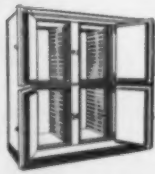
- Your customers get not only the finest in construction materials and design, but the all-important benefits the industry's most advanced skills and facilities can offer.
- Competitive pricing.
- Written warranty of efficient performance.
- As a Gloekler dealer you are protected on every transaction in your area, and get conscientious factory cooperation in maintaining good customer relations.
- Additional profit through sale of add-on features.

Yes, there's more for your customers and more for you in every Gloekler unit you sell.

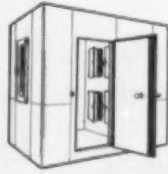
**STANDARD AND CUSTOM DESIGNS FOR EVERY
COMMERCIAL AND INSTITUTIONAL USE!**



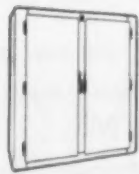
Reach-In



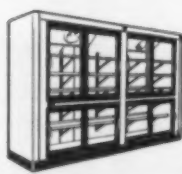
Bakery Freezer



Display Walk-In



Remote Reach-In



Wall Case

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What's New or Current Literature Available

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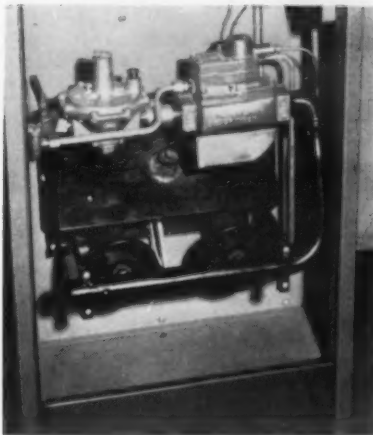
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DETROIT 26, MICHIGAN

Offers High-Capacity Gas Heating Control



KEY NO. G-524

LONG BEACH, Calif.—Development and production of a new-type automatic control for high-capacity gas home heating units was re-

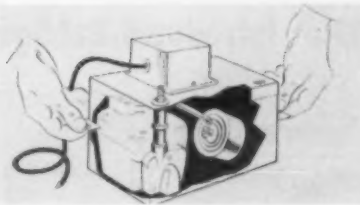
cently announced here by Grayson Controls Div., Robertshaw-Fulton Controls Co.

Designated HC-E, the control includes in one unit a snap-action gas valve, an automatic pilot with 100% shut-off feature, and built-in pilot filter, it was explained.

For use on central heating furnaces with ratings up to 200,000 B.t.u.h. on natural gas, the unit is suitable for use with all room thermostats, it was added. Control utilizes a new valve actuator as the thermo-element. This is a short, electrically insulated rod made of high-strength alloy which expands and contracts "on call" from the thermostat.

Actuator rod-type thermo-element eliminates need for a solenoid, according to the manufacturer. As a result, the control is virtually noiseless.

"Clicker" mechanism of the snap-action gas valve is of the same type as used in Robertshaw-Fulton "Unitrols."



Introduces Miniature Condensate Pump

KEY NO. G-526

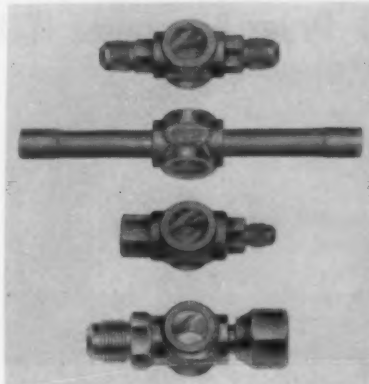
CHICAGO—A new miniature condensate pump known as "Bantam Condensate Unit" was recently developed here by S. Gelber & Sons, Inc.

Features claimed for the unit include hermetically sealed motor, positive-action mercury switch which is rubber coated, no protruding parts outside the tank, an inner neoprene and outer steel double tank for added strength with baked-on enamel, compact size of 5 by 11 by 7 in., and unconditional one-year warranty.

Designed for removal of con-

densation in mechanical refrigeration and air conditioning equipment, the unit is actuated by a copper float and mercury switch as the liquid rises in the tank. Water is pumped up and out until the tank is empty. Float switch cuts off automatically and ball check in discharge line prevents water from returning, the company explained.

Units are available with discharge heads of over 50 ft.



Non-Directional Liquid Indicators Developed

KEY NO. G-527

LIVINGSTON, N. J.—A new line of non-directional, double port liquid indicators for refrigeration use was recently announced here by the McIntire Co.

Springs and gaskets have been replaced by hermetically sealed glass-to-metal and metal-to-metal joints which are claimed to remain permanently leakproof under all conditions. Made of heavy forged

brass with extra-large clear-view windows on both sides, models have unrestricted straight-through flow to prevent pressure drop.

Model 75 is subjected to pressure tests before shipment. They include thermal shock immersion tests from -60° to 170° F.; drop tests from 16-ft. height to concrete floor; vibration tests with sealed-in Refrigerant-22; burst tests exceeding 2,000 p.s.i.

New line includes a choice of 16 connection sizes.

Pushbutton Thermostat Is 'Fashion-Styled'

KEY NO. G-525

ST. LOUIS—White-Rodgers Co. has announced a new "Fashion-styled Pushbutton" heating-cooling thermostat.



It is believed to be the first pushbutton room thermostat in the history of the temperature control industry, the company said.

Developed on the design premise of the proven sales success and marketing appeal that "pushbuttons" have received in other fields, the thermostat is a combination of a versatile new pushbutton sub-base and White-Rodgers' "Fashion Thermostat," according to the company.

Available in combinations to fit most heating-cooling systems, the new control offers from two to five actual pushbuttons. To make it adaptable to any background, the Pushbutton has been color-engineered in "Adobe-Beige."

The control is basically a "contoured square." "The shape is achieved by a hinged cover which conceals the dial settings, thermometer, and an easy-to-read dial with a large knob indicator for quick finger-touch adjustment," it was pointed out. "In over-all size it is only slightly larger than a pack of cigarettes."

White-Rodgers designed the Pushbutton with both adjustable anticipation to match the primary heating control, and built-in "cooling-anticipation." This combination "assures a more uniform room temperature," it is claimed.

In addition, the Pushbutton line will be economical to stock because the buyer can select combinations to fill his particular needs from just the Fashion Thermostat and choice of eight sub-bases, according to White-Rodgers.

SO HALSTEAD & MITCHELL ENGINEERS SAID:

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If your need is for finned coils—quality coils—and you need them fast, then write, wire or call us. Halstead & Mitchell's unusual manufacturing facilities give us production control matched by no one in the industry, and you'll benefit by the speed with which we can produce for you.

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Note that you get this high-speed delivery and extra-capacity at a most competitive price. We are large volume manufacturers, and thus can save production

costs which are passed to you in the form of attractive prices.

Want more details? Then write or call, Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.



NOLIN

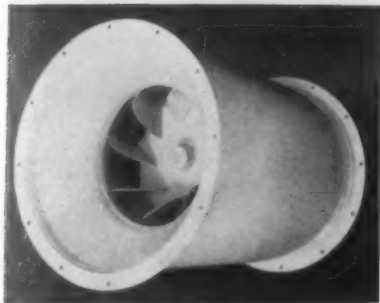
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Dryer Announces 'Tubular Centrifugal' Fan



KEY NO. G-528

BROOKLYN—Compactness of tubular fans and quietness of scroll centrifugals are combined in a new type centrifugal fan.

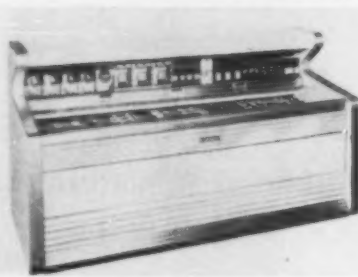
Designated "tubular centrifugal," the new fan is manufactured by the fan division of Dryer Elec-

tric Corp. for a variety of air conditioning, ventilating, and industrial-process applications.

"Despite external resemblance to axial fans, this is a true centrifugal, in operating principle and in low noise level and other performance characteristics," points out R. A. Benoit, president of Dryer Electric. Tubular design saves space and eliminates costly ductwork complications.

Almost triple the selection area of scroll-type fans is provided by the tubular centrifugal's efficiency curve peaked near the normal selection-range midpoint, it was stated. A pressure curve rising continually up to no-delivery contributes to the fan's stable performance.

Introduces Refrigerated Display Cases



KEY NO. G-529

MARSHALL, Mich.—New 5 and 8-ft. "Flexicold" refrigerated food display cases with which users can select the proper temperature for all foods have recently been developed here by Sherer-Gillett Co.

Temperatures from -5° to 44° F.

can be selected with the twist of a dial, the company pointed out.

Advantages listed for the 8-ft. Flexicold wall frozen food and ice cream merchandiser and island frozen food merchandiser include hermetically sealed cabinet and refrigerator unit, 19.7 cu. ft. of refrigerated space, 21.1 sq. ft. of shelf space, extra-heavy, glass fiber insulation, automatic defrosting and evaporation of condensate water, and "Sheralon" finish with anodized aluminum trim, it was added.

The 5-ft. "Spot Merchandiser" and "Spot Islander" have long-lasting finish with aluminum panels and trim, glass fiber insulation, a recirculated air system, automatic defrost, controlled air velocity and reverse airflow, and 39-in. selling level, no-glass fronts, 11.4 cu. ft. of refrigerated space, and 11.15 sq. ft. of shelf space, the company said. The units come with or without canopy and are available in models designed for either frozen food or ice cream displays.



Improves Stable Non-Acid Flux

KEY NO. G-5210

PHILADELPHIA—A newly improved stable non-acid flux for soldering copper, brass, steel, and "Terneplate" was developed recently by Farrelloy Co.

"Wetol" is fortified with spirits of metal which react on solder to increase fluidity and spread factor, the company said. It contains alkaline buffers which not only increase the stability of flux but reduce it to its own residual attack, it was explained.

Wetting action is said to make possible penetration of dirt, oil, and grease so a uniform envelope is formed giving even tinning action with no skips and a bond of much tensile torsion strength.

A fast scavenger at low heat, Wetol will withstand a wide temperature range without oxidizing, does not fume, and can be used either with a torch or soldering iron, it was noted. It is water soluble, leaves no sticky or gummy residue. It sells for \$2.75 a gallon.

30° 'ROUND THE CLOCK!

and do it economically!

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DETROIT NO. 714

LARGE CAPACITY EXPANSION VALVES

FEATURES

• BROAD RANGE OF APPLICATION

2 to 10 tons -12 and
3 to 17 tons -22, for air conditioning,
commercial and low temperature use.

• CUSTOM CHARGES FOR ALL APPLICATIONS

Available with any of Detroit's custom charges;
"C" for commercial, "Z" for low temperature,
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Inlet 1/2" to 7/8" O.D.
Outlet 3/8" to 1 1/8" O.D.

• LEVEL ACTION FEELER BULB

Minimizes surge for very close superheat
control and maximum valve operating
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Entire valve easily disassembled for in-
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DETROIT CONTROLS

CORPORATION

Division of AMERICAN-STANDARD



Develops Taper-Face Welding Neck Flange

KEY NO. G-5211

LOUISVILLE, Ky — Recently introduced by Tube Turns Div. of National Cylinder Gas Co. was a 125-lb. taper-face light weight welding neck flange.

Patent is pending on the flange which is said to overcome two difficulties. Its tapered face causes greater pressure to be exerted near the bore, eliminating problems in obtaining a leakproof seal. Also, strain gauge tests show the new flange, equipped with full face gasket, can be safely bolted to cast iron or semi-steel flanges, the company noted.

Hydrostatic tests indicate that when the flange is properly used the joint is capable of withstanding about three times the pressure it could contain if the taper was omitted, it was stated.

Rated at 125 lbs. for water, oil, and gas service, the flange matches 125-lb. cast iron flanges and valves made to ASA B16.1, and bolt circle and drilling are the same as employed for ASA 150-lb. standard steel flanges.

Available in 1 through 12 in. sizes, the welding neck flange is bored to match .188 and .250-in. wall pipe in sizes 4 through 12 in. within the 3/32 in. mismatch allowed. It is said to be useful to designers of refrigeration, water, and similar low-pressure systems.

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PROTECTION**

**MECHANICAL INDUSTRIES
PRODUCTION COMPANY**

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Canadian Representatives: RAILWAY AND ENGINEERING SPECIALTIES LTD., Montreal, Toronto, Winnipeg

For more information about products advertised on this page use Information Center, page 32.

Juvenile Hall To Cool Down Wayward Kids

LOS ANGELES — Construction is being completed on a modern, air conditioned branch juvenile hall facility for the short-term placement of youth under detention in the Downey section of Los Angeles.

The new facility, Rancho Las Amigos, under jurisdiction of Los Angeles County, is being set with air distribution units manufactured by Drayer-Hanson, Div. of National-U. S. Radiator Corp.

Tempered air will be provided for the varying temperature requirements which must be met in individual areas. Two types of systems will be utilized; central-plant multizone equipment, and floor-mounted air handling unit. The complete system for heating, air conditioning, and ventilating, was designed by J. H. Baum & Sons.

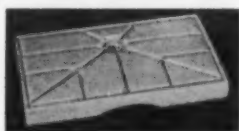
Equipment is being installed by Air Masters, Inc., Los Angeles. D-H local sales representative, Air Conditioning Supply Co., finalized negotiations for the national manufacturer of air conditioning equipment, it was noted.

Heat Pump Conditions Home

MULLINS, S. C. — Mark Wheeler, local General Electric Co. heating and air conditioning dealer recently completed his modern electric home served by an all-electric kitchen and a G-E Weathertron heat pump for year-round air conditioning.

Call on GLO-BRITE for

Molded Fabricated



Dow Styrofoam
Koppers Dylite

EXPANDED POLYSTYRENE PARTS FOR REFRIGERATORS, FREEZERS, AIR CONDITIONERS, LOW TEMPERATURE ENCLOSURES, PIPE COVERING.

Low Temperature Insulation Shaped or Molded Precisely to Your Specifications.

GLO-BRITE PRODUCTS, INC.

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Chicago 45, Illinois

30° KEEPS FRESH FOOD FRESH!

and it can be done economically!

Watch the NEWS for more news!

Mobile 2½ Ton Units Air Condition Jet Planes In Testing, Pre-Flighting

LOS ANGELES — Mobile, four-wheel air conditioners for use in testing and pre-flighting of jet aircraft have now entered the production-line stage at Electric Machinery & Equipment Div. of American Electronics, Inc., the company announced.

These 2½-ton air conditioners "contain an airflow which is automatically controlled to any pre-set value between 10 and 60 lb. per minute regardless of variations in static pressure, ambient temperature, or discharge temperature," it was stated. "The units may be used for both cooling and heating operations."

"Built to WACD specifications, the model MA-7 air conditioner is powered by a USAF Packette



MOBILE, four-wheel air conditioner for use in testing and pre-flighting jet aircraft are produced by Electric Machinery & Equipment Div., American Electronics, Inc.

Series, air-cooled engine, and MA-7 and optional on the MA-8 the model MA-8 by an electric is a self-mobility system for maneuverability around aircraft motor.

"Standard equipment on the at one mile per hour. This sys-

tem contains a rear wheel drive from a d.c. motor. The unit is towed to the aircraft and then moved into final position under its own power," the company stated.

"When used for cooling, the conditioned air discharge is manually controllable between 35° F. and 65° F. The selected temperature is automatically held to plus or minus 3° F. when operating at full capacity and to plus or minus 5° F. when operating at loads less than full capacity."

"When heating, conditioned air discharge temperature is manually controllable between 70° F. and 200° F. at any flow rate between 10 and 60 lbs. per minute. The selected temperature is automatically held to plus or minus 10° F."

"Both the MA-7 and MA-8 ground support air conditioners can be adapted for use in pre-flighting commercial aircraft," it was explained.

These profit-making benefits sold me on American Blower Packaged Air Conditioners



\$ You handle a complete line of packaged air conditioners. Sizes from 3 to 20 tons.

(Lets you bid on any commercial job!)

\$ Ruggedly designed for years of trouble-free performance.

(Why let service call-backs rob you of your profit margin?)

\$ All models engineered with you in mind. Easy access to unit through full-size front panels.

(You don't have to be a contortionist to service these air conditioners!)

\$ Complete customer satisfaction. Units are comfort-engineered for efficient, quiet operation. All-new decorator styling; and a full five-year warranty on the complete refrigeration system.

(The word gets around — it's nice for repeat business!)

\$ Your sales effort factory-backed with hard-hitting advertising, merchandising aids, sales-training plan, and a flexible co-operative advertising program. All this designed for you by American Blower — a leader in air handling and air conditioning for over 75 years.

(Your prospects are pre-sold — you have a ready-made market!)

\$\$ Total these advantages — they can add up to many more customer sales and greater net profits.

SO ACT TODAY! Start earning those increased profits now! For full information on how you can handle American Blower's 1957 Packaged Air Conditioner line, write: American Blower Division of American-Standard, Detroit 32, Michigan.

DISTRIBUTORS: Choice territories are still available. Send for franchise data, today.

AMERICAN BLOWER

Division of **AMERICAN-STANDARD**



AIR - CONDITIONING EQUIPMENT FOR EVERY BUSINESS

For more information about products advertised on this page use Information Center, page 32.

Just Out - "The 1957 Air Conditioning Specifications Guide"

Contains complete data on every major Room, Residential, and Commercial packaged air conditioning unit built today.

Over 1,200 different models . . . more than 38,000 facts and figures. Guarantee that each member of your firm will have his "Specifications Guide" to consult daily. Order NOW.

1 - 9 copies (\$1 each) 10 - 49 copies (\$.75) 50 or more (\$.50)

AIR CONDITIONING & REFRIGERATION NEWS
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Apples last longer at 30°!

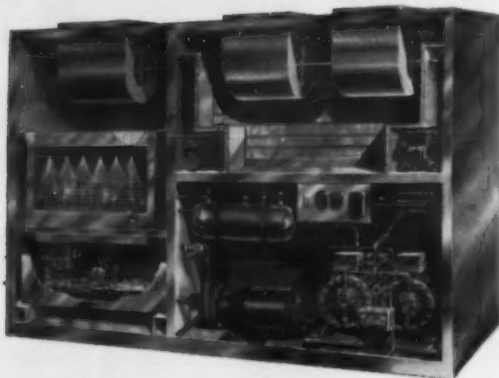
and it can be done economically!

Watch the NEWS for more news!

COND-AIR AIR CONDITIONING UNITS

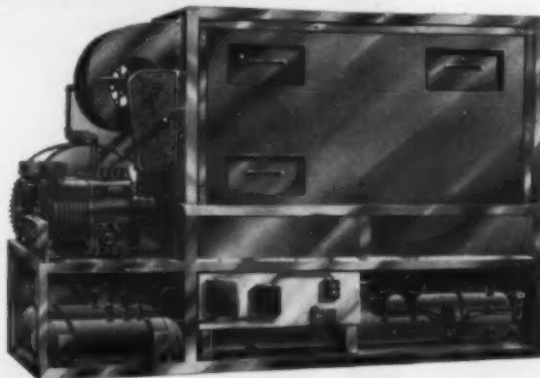
*Quality second to none...
Priced Lower than you would expect!*

COND-AIR air conditioning units offer you the *best in quality*... exclusive stainless steel evaporative condenser tank. Packages are factory assembled and attractively finished. COND-AIR units are *low in price*, and they continue to save you money at every step of the installation... eliminate costly field labor, assembly work, cut installation to necessary field plumbing, high voltage, thermostat and sheet metal connections. *For top quality—and top economy—COND-AIR is your best buy!*



COND-AIR completely packaged
DIRECT EXPANSION UNITS

These units incorporate a compressor, evaporative condenser, and air handler in one complete package. Available in 2, 3, 5, 7½, 10, 15 and 20 ton capacity. (20 ton capacity, Model EC 200 H, illustrated.)

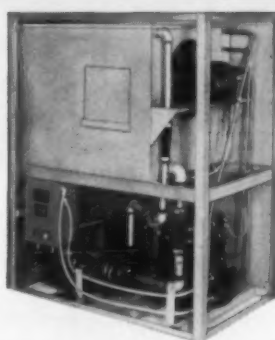


COND-AIR completely packaged
WATER CHILLERS

These units incorporate a compressor, evaporative condenser, and chiller in an easily installed complete package. Available in 5, 7½, 10, 15 and 20 ton capacity. (15 ton capacity, Model WC 150 illustrated.)



COND-AIR completely packaged
AIR HANDLING UNITS
These units are available in up-flow, down-flow, vertical or horizontal models. Sizes range from 3 to 10 ton capacity. (3 ton capacity, Model VAH 30, illustrated.)



COND-AIR completely packaged
"HIGH SIDE" SECTIONS
These units incorporate a compressor and evaporative condenser in self-contained complete packages. Available in 3, 5, and 10 ton capacity. (3 ton capacity, Model ECR 30 R, illustrated.)



Now COND-AIR completely packaged **Year 'Round AIR COOLED Conditioning Units**

These units include companion furnaces and precharged quick-connect lines as optional accessories. They are available in 2, 3 and 5 horsepower models.

Just look at these COND-AIR features!

- Low price
- Easy installation
- Requires minimum of servicing
- Adaptable and flexible
- Economical operation

There are still some exclusive COND-AIR franchises available. Write today for information about your area.

Cond-Air
DIVISION

Write today for prices, literature and information about your next installation.

ELLIOTT ENGINEERING COMPANY

2800 EAST CENTURY BOULEVARD • LYNWOOD, CALIFORNIA

Shreveport Code Puts 'Bite' on Cooling Contractors; Registration Fees Upped

SHREVEPORT, La. — The "bite"—spelled \$\$\$\$—is being put on air conditioning contractors in Shreveport.

Under new revisions to the city's air conditioning code, permit fees are being raised \$1, with the minimum set at \$3. Re-inspection fees are set at \$3.

Previously, initial registration fee was \$10 and renewal fee \$5 for all air conditioning contractors.

Under the new code—which takes effect June 1 for previously registered contractors and is already in effect for new applicants—initial fee is \$50.

Contractors are now divided into three classes, according to knowledge and financial ability of the firm or individual. For the first class, the renewal fee is

\$50; for the second class, \$100; and for the third class, \$150.

Each class will pay a similar fee as a deposit guaranteeing compliance with the code, according to Clyde Juneau, chief air conditioning inspector for the city.

Journeyman, who must also be registered, must pay a \$1 fee for their examination.

Juneau said all contractors were notified of the changes in the code by certified letter. He added that the new code will be explained by him next September in classes at the Shreveport Technical School.

A new clause in the code will call for denial of a permit to any firm failing to repair a rejected job within 20 days of the rejection.

The new permit and registration fees, Juneau said, are expected to bring the city an additional \$3,000 per year in revenue.

Winters Buys Central Conditioning Business

NASHVILLE, Tenn.—According to President James H. Winters, the James H. Winters Co. has purchased the inventory, goodwill, and customer lists of Phillips & Buttorff Mfg. Co.'s central air conditioning and heating, roofing, and sheet metal departments.

At the same time the Winters firm entered into an agreement to service the warranties on central air conditioning and heating equipment sold by Phillips & Buttorff.

The consideration was not revealed, but the inventory was valued at approximately \$40,000, it was learned. The 45 truck loads were moved to the Winters establishment, 210 Main St., where it will be integrated with Winter's already extensive air conditioning, heating, sheet metal, and roofing business.

This transaction puts Phillips & Buttorff out of the three retail businesses for which it has been known for generations—central heating, roofing, and sheet metal, and another of more recent years—central air conditioning.

Winters has been in the heating, roofing, and sheet metal business here 20 years, and in the air conditioning business eight years.



UL **MASSIVE DEPTH FILTERING!**
FILTER-DRYERS

Super-Flo's massive fiberglass depth filter and a molded drying element increase foreign matter, moisture and acid removal. Write for low prices.

AVAILABLE TO THE TRADE THROUGH WHOLESALEERS EVERYWHERE

REMCO INC.
ZELIENOPLE, PA.

Resort Area Service Business

Looking After Cottages During Winter Months Gives Contractor
An Opportunity To Increase Service Work, Suggest New Equipment

SILVER CREEK, N. Y.—A local plumbing, heating, and air conditioning contractor has found a way to increase service and sales in this summer resort area.

Guarcello's Plumbing, Heating & Air-Conditioning Co. wanted to interest summer visitors to this south shore Lake Erie locale in "doing business with our company." A policy of all-year service was developed to create this interest, according to James J. DeJohn, proprietor.

Several summer residents came to Guarcello's and asked if the company would look after their homes after they had left at season's close. They also requested the contractor to make a list of any improvements

needed and give them the list when they returned the next summer.

Word spread among summer cottage owners that Guarcello's would see that everything was in order over the winter. Others began to take advantage of this and a new service was added by the firm.

It has developed into a profitable sideline, DeJohn explained, resulting in increased work and added sales.

Summer residents leave keys to their homes with the firm during the off-season. A serviceman sees to it that the home is locked, water turned off, and provides other similar services. Periodic checks throughout the winter are made to make sure

that everything is all right.

In early spring, Guarcello's writes residents for whom it performs this service, asking to be informed two weeks in advance of the owner's return for the summer. After receiving

this information, Guarcello's sends a serviceman out to open the cottage, turn on water and other utilities.

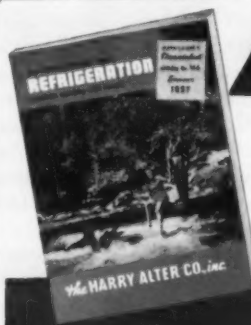
Then a list of items needed and things to be done is made up for the owner to check when he arrives.

Special rates for repair or replacement work are offered for a two-week period, DeJohn pointed out. Owners are requested to take advantage of this offer which includes plumbing

repairs, installation of new plumbing, heating, or air conditioning items purchased, and so on.

Time involved in caring for summer homes has been compensated for by increased volume of summer business, DeJohn added.

A practice is made of keeping a special file on each serviced cottage, together with a suitably tagged key, at the contractor's headquarters.



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Air Conditioning and Electric Motors, Too!

OVER 10,000 ITEMS . . .

most complete list in the world . . . appear in the Harry Alter DEPENDABOOK No. 166 Summer, 1957 with illustrations, descriptions, prices. **SAVE MONEY**, time and effort by ordering from this compact, easy-to-read, up-to-date catalog.

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Wolverine Starts Work On Allen Park Offices

DETROIT—Wolverine Tube Div. of Calumet & Hecla, Inc. has begun construction of a new \$600,000 administrative office in Allen Park, a Detroit suburb.

A one-story building with a brick, glass, and vitreous covered steel exterior, the 24,000-sq. ft. structure will be housed on an 8-acre wooded site. An additional 7,000-sq. ft. building will be erected to house research and development activities.

When the new buildings are completed in 1958, 150 headquarters and general sales office employees will move from two offices in downtown Detroit to the new facilities.

D. W. Blend, general manager of Wolverine Tube and vice president of Calumet & Hecla, emphasized that both buildings are designed to permit future expansion as needed.

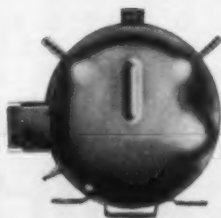
Worthington Classroom Offered to RSES Chapter

EAST ORANGE, N. J.—Complete classroom and shop facilities here have been made available by Worthington Corp. to the Garden State chapter of Refrigeration Service Engineers Society for the next semester of the latter's study course beginning in September.

Arrangements were made through E. C. Hamilton, general service manager, and Ed. Lindsay, director of education, Ampere Works, of Worthington's air conditioning and refrigeration division. Representing the RSES chapter in negotiations were Sidney Zackin, John A. McDougall, and A. E. Manning.

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Kelvinator's new
hermetic production
facilities now
make available new
"SPACE-SAVER"
COMPRESSORS
built to highest
standards of quality,
to give you superior
performance at
competitive prices
—in even greater
volume



New "Space-Saver" hermetics, only 10 $\frac{1}{32}$ " high x 11 $\frac{3}{8}$ " wide x 6 $\frac{1}{4}$ " deep, are truly compact, top quality compressors. They already have thoroughly demonstrated their excellent performance in many applications. Light in weight, low in cost, they are available in natural or forced convection models.

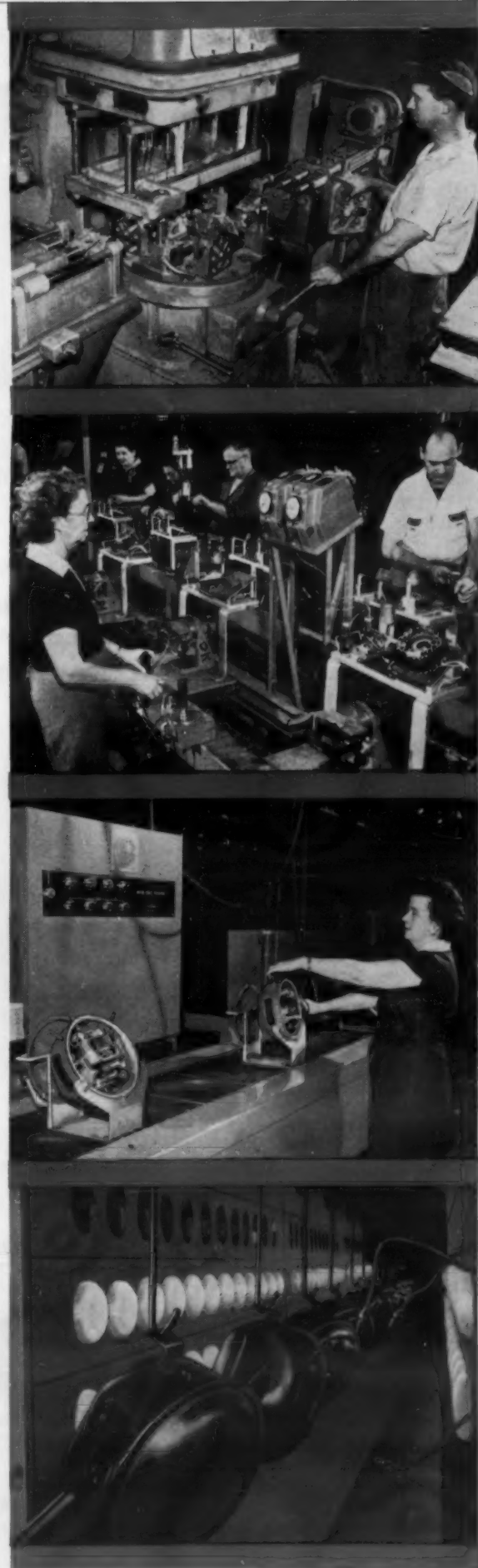
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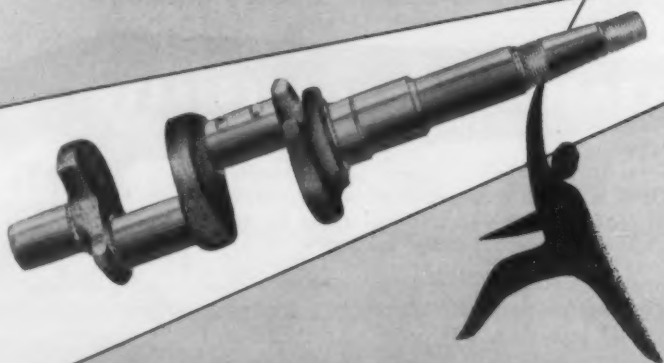
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PRECISION QUALITY SINCE 1933

SHAFTS by MODERN

Shafts by Modern now power compressors for the leading lines of commercial refrigeration and air conditioning units. For precision SHAFTS, in quantity, consult us. Send blueprints for quotation.

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Pioneers in Shaft Manufacture

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FOR FRESH FRUITS 30° IS BEST!

and it can be done economically!

Watch the NEWS for more news!

Two-In-One Drink Dispenser Makes Own Ice, Serves 24 Iced Drinks Per Minute

ALBERT LEA, Minn.—A new drink dispenser that makes its own crushed ice and is capable of serving up to 24 iced drinks a minute has been announced here by American Gas Machine Co., Div. of Queen Stove Works.

Restaurants, cafeterias, soda fountains, and concession stands serving carbonated beverages during peak periods will save steps and time, according to the manufacturer, since the new 2-in-1 unit eliminates double handling of ice hauled from a separate bin. The ice making unit is said to produce pure ice at low cost.

Steady-traffic counters are assured a continuous supply of crushed ice for serving drinks at below 40° F., the company claims, because the new dispenser-ice maker produces "cooling ice for 1,700 drinks over a 10-hour day at 4 per minute."

The ice produced and stored is used as pure crushed ice for cool drinks, as a supply for dispenser heads, and for pre-cooling and post-cooling carbonated and non-carbonated water, since ice is in direct contact with two circuit plates designed for this.

"Scotsman" model SD-1 drink dispenser is reported capable of making up to 350 lbs. of crushed ice a day, and storing up to 150 lbs. in a built-in stainless steel storage bin. An automatic bin control cuts off further production while the bin is filled.

The unit will take two standard 1-gal. fountain heads. Two draft arms, for plain and carbonated water, are included. In addition, the unit has a built-in stainless steel drain tray and counter space for volume serving, as well as bulk storage compartment.

It is equipped with self-con-



DRINK dispenser that makes its own crushed ice and can serve up to 24 iced drinks a minute has been developed by American Gas Machine Co.

tained carbonator with capacity of 100 g.p.h., stainless steel carbonator tank, and 1/4-hp. air-cooled twin-cylinder compressor for ice making.

Patented Scotsman flaker mechanism is featured in SD-1.

Joint RACCA-UA Group To Negotiate Conditioning, Refrigeration Agreement on Florida's West Coast

TAMPA, Fla.—A joint union-contractor committee that will negotiate a refrigeration and air conditioning agreement for the west coast of Florida has been established in the Tampa area, according to Ray Kromer, executive vice president of the Refrigeration & Air Conditioning Contractors Asso-

ciation.

The committee is composed of two RACCA contractors and two United Association representatives from each of the following areas: Bradenton, Sarasota, Tampa, and St. Petersburg.

The three local unions covering that area are combining to form a refrigeration and air conditioning division.

The committee is also charged with establishment of a Joint Industry Board. It is studying the objectives and financing of the New Jersey joint board as a model, Kromer noted.

Cooper Heads New RTA Officer Slate

WASHINGTON, D. C. — A newly-elected slate of officers for the Refrigeration Trade Association of America has been announced here.

William A. Cooper is president for the coming term. He has served for two terms as president of the RTA of Washington, D. C.

First vice president is A. E. Bates; second vice president, J. B. Broughton; William G. Krause, secretary; Sidney Bloom, treasurer; George Nash, sergeant-at-arms.

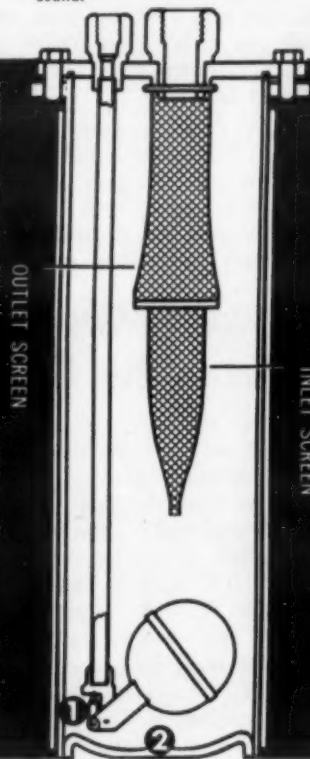
One-year directors are: A. C. Huber; John Orner; N. F. Crater, Sr., chaplain; and H. S. Dudley. Directors who will serve two-year terms: H. W. Sadler; J. D. Dettler; L. L. Carter, past president of RTA; Arthur Jarrett; and A. F. Carpenter.

William J. Batrus is executive secretary and general counsel.

get peak refrigerating EFFICIENCY with a TEMPRITE OIL SEPARATOR

Oil is separated from the gas before it can get into the evaporator and is returned to the compressor automatically...

- Full capacity of expansion valve assured.
- Evaporator heat transfer increased.
- Constant clean oil lengthens compressor life.
- TEMPRITE oil separator muffles sound.



- 1 OIL RETURN VALVE: Located ABOVE the sludge reservoir.
- 2 SLUDGE RESERVOIR: Traps sludge, oil, carbon, and foreign substances, preventing their continued flow through the refrigerating system.

Complete range of capacities for refrigerants 12 and 22. ASME and UL approved.

8 PAGE BOOKLET ON REQUEST

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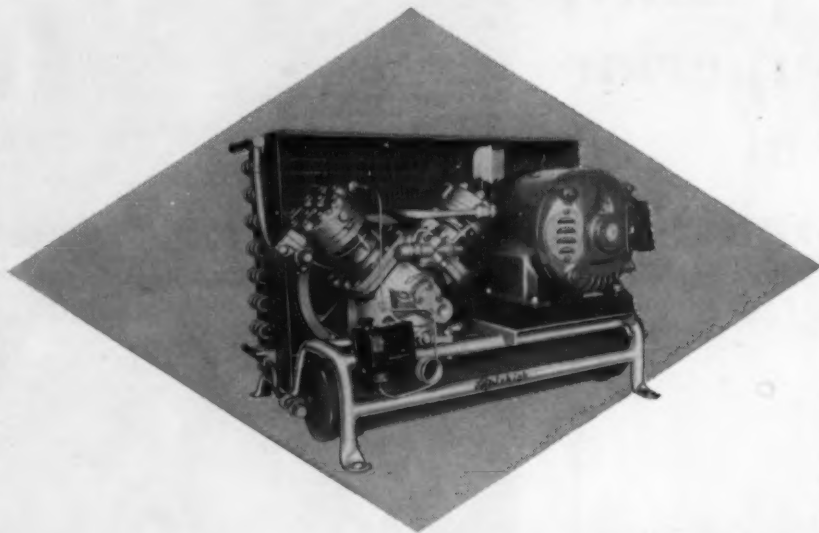
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Send me Oil Separator Booklet No. T-397.

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Address _____
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ADAPT-ability
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—and their unique tubular air-frame base adds complete ACCESS-ability!

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Air Conditioning and Refrigeration parts, equipment, supplies.

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2732 N. Ashland Ave., Chicago 14, Ill.

Men on the Move . . .

Norge Div., Borg-Warner Corp.—Appointment of KENNETH V. OLSON as district manager for Oklahoma and most of Texas has been announced. He will be in charge of home appliance sales to distributors in Houston, San Antonio, Dallas, and Oklahoma City. Previously he was district sales manager with Servel, Inc. in the Dallas area.

Trane Co.—FRED MANGET, JR., sales engineer with the Dallas office, has been named manager of the New Orleans office. WILLIAM D. GRAHAM, SR., manager since 1951, has retired.

JOHN KENNEDY has been named industrial engineering department manager. He formerly was vice president of Construction Management, Inc., Indianapolis.

Frigikar Corp. (Dallas) — D. GORDON RUPE, president of Dallas Rupe & Son, Inc., has been elected a director.

York Corp., subsidiary of Borg-Warner Corp.—E. F. EDWARDS, midwest district manager, has resigned to become president of his own firm, E. F. Edwards Co., St. Louis, an independent franchised associate of York. The firm will sell, install, and service the York line of industrial air conditioning and refrigeration equipment in eastern Missouri and southern Illinois.

Wheelco Instruments Div., Barber-Colman Co.—H. J. HOFFMAN has been named manager of the newly-established sub-branch office in Columbus, Ohio.

Robertshaw-Fulton Controls Co.—Appointment of WILLIAM OHLY as distributor sales manager for Acro Div. was announced. He formerly was a sales engineer with Acro Mfg. Co., recently acquired by R-F.

MARVIN G. CALHOUN has been named supervisor of bellows sales division of Fulton Sylphon Div. He has served as application engineer.

J. H. FIELDEN, who has been with the firm 13 years, was appointed applications engineer.

Haverly Equipment Div., John Wood Co.—VICTOR MAUCK, JR. has been named factory manager of the recently set up Royersford, Pa. plant. He has been production superintendent and plant manager for various divisions of the firm.

Fairbanks, Morse & Co.—R. K. ANNIS, who was assistant to the manager of the firm's Kansas City, Kan. works, has been named development engineer.

Owens-Corning Fiberglas Corp.—L. E. COVER, who retired from Armstrong Cork Co. after 41 years' service, has joined the firm as consultant to the Appliance & Equipment Products Div.

Babcock & Wilcox Co.—M. NEILSEN, for the last two years executive vice president, has been elected president. He succeeds ALFRED IDDLES, retired, who served as president since 1948.

American Chemical Paint Co. (Ambler, Pa.)—GEORGE H. WILLIAMSON has been elected vice president—west coast activities.

Industries Group, Allis-Chalmers Mfg. Co.—J. S. MORGAN has been named domestic sales director. He had been utility sales director for the Group.

Three appointments have been announced for the Pittsburgh office. JOHN H. BAISLEY, a Pittsburgh office sales representative, has been promoted to manager, metals industry sales. E. E. ELLIS, who has been on the administrative staff of the vice president and general manager of the firm's Power Equipment Div., has been upped to manager, general industrial sales. L. H. WATKES, Cleveland district sales representative, has been named manager, utility sales.

Home & Auto Supply Div., Firestone Tire & Rubber Co.—G. F. COYLE, division merchandise manager of major appliances, has been named merchandising manager of major appliances, radio, and television, a newly-created post.

L. L. ZARRILLI, buyer of major appliances, has been named major appliances sales manager.

Dole Valve Co.—JOHN J. GOODWILLIE, an assistant vice president-sales, has been upped to vice president of the firm.

JAMES K. LUND, assistant vice president, engineering and research, was also named a vice president.

JOHN A. KOVAS, S. G. ESKIN, and ELMER A. SKOWBO were named assistant vice presidents.

L.O.F. Glass Fibers Co.—CLYDE F. HEASTON, formerly self-employed making and selling sliding glass door frames, has been assigned as industrial engineer with the Pacific Coast Div.

Hupp Corp.—ROBERT L. PLASKO, recently associated with A. J. Lindemann & Hoverson Co., has joined the firm as sales engineer for the "Globe" line of plumbing, heating, air conditioning, and sprinkler supplies.

Lando Advertising Agency (Pittsburgh)—WILLIAM I. SCHERB, who has been acting supervisor of sales training for Westinghouse Electric Corp.'s Air Conditioning Div., has been named an account manager.

Philco Corp.—Three new directors were elected to the board recently. They are RICHARD C. BOND, president of John Wanamaker, Philadelphia; DR. GAYLORD P. HARNWELL, president of the University of Pennsylvania; and WILLIAM R. WILSON, treasurer of Philco.

Perflex Corp. (Milwaukee) — WALTER J. BEYER was promoted to the newly-created position of engineering manager. ROBERT G. JENSEN succeeds him as chief engineer of this heat transfer products firm.

Frigidaire Div., General Motors

Corp.—Five sales executive appointments have been announced by the firm.

WILLIAM J. DINSMORE, Oklahoma City branch manager, has been transferred to Dayton and promoted to manager of range and water heater sales.

PAUL W. GUTHRIE, former manager of the Milwaukee branch of Frigidaire Sales Corp., has been named manager of the Denver branch. He succeeds W. H. BALDWIN who has been transferred to Portland, Ore., as manager of the new Frigidaire Sales Corp. branch there.

WENDELL H. SMITH, previously in charge of contract sales in building industry, has been promoted to supervisor of building industry sales.

RALPH R. WEIGEL of the building sales department, has been named to handle contract sales, succeeding Smith.

Whirlpool Corp.—DALE GRAHAM, formerly an assistant product manager, has been promoted to product manager of dryers, wringers, and ironers for RCA

Whirlpool home laundry appliances.

JOHN P. ENGELHARDT, also previously an assistant product manager, has been upped to product manager of automatic clothes washers and combination washer-dryers.

NEIL FORBES has been named to the new position of product coordinator of the laundry division. He was formerly supervisor of cost analysis for the St. Joseph Div.

GERALD L. HARTMAN has been appointed to the new post of product manager for gas, built-in, and electronic ranges. Before joining Whirlpool, he operated his own merchandising consultant business.

KARL R. HAKE, formerly assistant product manager for ranges, has been promoted to product manager of electric ranges.

Carrier Corp.—THOMAS P. RHOADES has been appointed assistant to the chairman of Carrier. He was formerly director of public relations for Campbell-Ewald Co., national advertising agency in Detroit.

WHY SUFFER FROM "STANDARD CATALOG UNIT" HEADACHES?

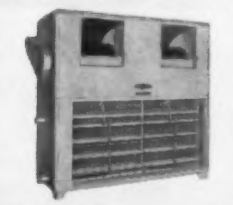
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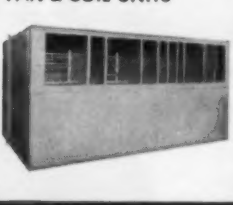
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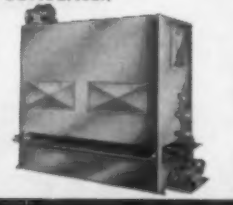
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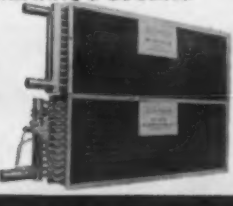
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CORROSION

Part 6—Plastic Pipes

(First of Two Sections)

By Frank J. Versagi, Chief Chemist,
Mueller Brass Co., Port Huron, Mich.

In our articles on corrosion we mentioned the several ways in which metal piping can corrode. Imagine a piping material which will not conduct electricity, therefore making electrolysis and galvanic action impossible; a material which is unaffected by all know waters and soils; a material in which corrosion cannot occur.

Such are the plastic pipes. Of course, plastic pipes have

limitations—serious ones from the engineering point of view, and we shall look into both the advantages and disadvantages as we proceed.

However, plastic pipes are suitable for a wide range of applications. Used in cooling towers, ground coils for heat pumps, skating rinks, and radiant heating, plastic pipes are beginning to make themselves felt in the refrigeration field.

WORKING PRESSURE OF SCHEDULE 40 POLYETHYLENE PIPE (At 73° F.)

Normal Pipe Size	Working Pressure P.s.i.
1/2"	104
3/4"	86
1"	81
1 1/4"	68
1 1/2"	61
2"	52

As the temperature increases, the allowable working pressure decreases. See manufacturer's literature for details.

They are here to stay, and forward-looking refrigeration servicemen have used or are keeping aware of these new materials.

Unfortunately, the loosely used words "plastic pipe" do not refer to a single material; there are many plastic compounds suitable for use in pipes, just as the words "metal pipes" would include copper, aluminum, iron, galvanized, steel, and monel. To be able to evaluate plastic pipe, it is necessary to be familiar with the major types encountered commercially and to know something of their established uses in other fields.

4 Plastic Materials Used In Piping

In spite of the fact that there are dozens of plastic materials which can be fabricate into pipe, there are presently only four materials of practical interest to the refrigeration industry. These four are polyethylene, polyvinyl chloride (PVC), Kralastic, and butyrate.

Polyethylene is the most familiar to tradespeople and laymen. This is the flexible black plastic pipe normally supplied in coils from 100 ft. to 400 ft. depending on the pipe diameter and used for rural watering systems, for home sprinkling units, and for wells. For special purposes, longer coils up to several thousand feet can be supplied.

Adapters exist which make it possible to join polyethylene to any existing metal pipe line.

Polyethylene 'Will Always Be Leader'

Presently accounting for about 80% of all plastic pipe sales, polyethylene will always be the leading pipe material in the foreseeable future, although its proportion of the total sales may drop somewhat.

Flexibility is the outstanding advantage of polyethylene. One engineer, experimenting with polyethylene for the ground coil in a heat pump, was able to lay 700 ft. of pipe in less than half an hour, using only one fitting in the coil itself.

In water supply lines, the flexibility and long continuous lengths of polyethylene allow easy detouring around obstacles like trees and rocks. In addition, there is the physical ease of handling the material; 300 ft. of 1-in. polyethylene pipe weigh less than 60 lbs. The same length of steel pipe would weigh about 480 lbs.

The smooth interior wall of well made polyethylene combined with the long continuous lengths reduces the friction loss

The experienced refrigeration and air conditioning serviceman is familiar with the fundamental principles of several trades and professions. Familiarity with the basic principles of corrosion chemistry can serve as an added valuable tool in his work.

This series of articles by Frank J. Versagi, chief chemist, Mueller Brass Co., will also delve into the causes and effects of corrosion in refrigeration and air conditioning systems. Part I of the series was concerned with chemical corrosion. Part II dealt with electrochemical corrosion. Part III dealt with electrochemical corrosion where electrolysis is involved. Parts IV and V dealt with the role of water in corrosion. Parts VI and VII deal with plastic pipe.

to such an extent that it is sometimes possible to use polyethylene one size smaller than the iron pipe required for get the same flow rates.

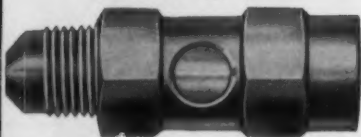
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- new simplified design.
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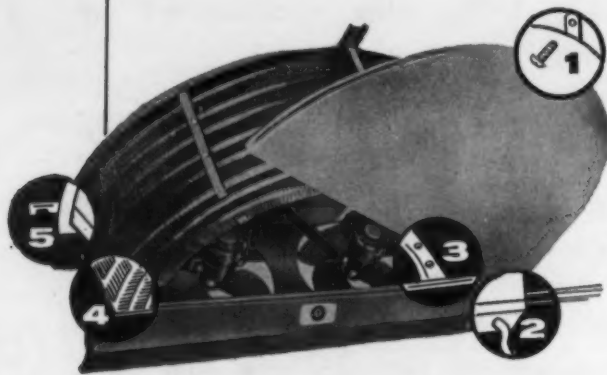


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Twin motors and fans give double protection...a single motor will maintain safe temperature...attractive covers have rust proof baked-on finishes...filters are available for applications requiring clean air circulation...female pipe thread adapts drain connection to any line...units skillfully engineered for long, dependable service.

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Corrosion--

(Continued from preceding page)

water was high in mineral content—the type that builds up scale rapidly in metal piping. Because of the smooth inner wall and because the flexible plastic pipe expanded and contracted with heat changes more than would a metal pipe, the scale would not adhere to the walls. Instead it traveled to small spray openings, clogging them. A Y-type strainer solved the problem.

Another advantage gained by the flexibility of polyethylene is the fact that the pipe can withstand repeated freezing, with water inside, without rupturing. Although leaving exposed or shallow-buried lines full of water in freezing weather is not recommended, there is the assurance that polyethylene can withstand repeated freezing without damage.

The mention of freezing brings to mind the increasing use of polyethylene in portable skating rinks. Large and small cities are finding it economical to lay rinks over summer playground areas then remove them when the skating season is over. The Detroit Department of Recreation has issued a valuable pamphlet describing its experience and recommendations for installing plastic skating rinks.

At the other end of the temperature range is the use of polyethylene in radiant heating—a controversial subject at the present time. Recently there has been great discussion about an extensive series of plastic pipe (polyethylene) failures in West Coast radiant heating installations. Several contractors as well as pipe producers are in economic difficulties because of these failures.

On the other hand, there are polyethylene radiant heating panels which have been in use for seven years; there are companies whose pipe has never failed in radiant heating service. In spite of the rash of failures on the West Coast, contractors are installing polyethylene in soundly engineered systems throughout the rest of the country. The answer seems to lie in such sound engineering and in the use of quality pipe.

Quality-wise, the polyethylene pipe market is a confusing one for the end user. Especially when the pipe is not to be used for carrying drinking water—as would be the case in most air conditioning and refrigeration uses—many confusing claims are made for the various grades of pipe.

Here's what to look for: The highest quality polyethylene pipe, pipe which can safely be used for carrying drinking water and food fluids, is made from "virgin polyethylene"—the basic raw material supplied by

prime suppliers like Bakelite, Spencer, and du Pont.

The National Sanitation Foundation allows its NSF seal to be placed on pipe made from this material when the manufacturing operation itself is also inspected by the foundation.

The National Sanitation Foundation is a non-commercial research and advisory group, rather than a semi-official organization like RSES, ASTM, and others. For this reason, some plastic pipe producers, especially those who have established reputations in other lines of business, do not use the NSF seal although their pipe is of the highest quality.

The NSF seal has nothing at all to do with the physical properties of the pipe—things like working pressure, dimensions, and the like. It restricts itself to identifying a pipe as suitable for handling drinking water without adding any toxic substance to the water.



AT TOP is a flexible plastic adaptor for iron pipe; below is an insert tee for flexible polyethylene insert fitting.

Since quite a bit of pipe is used to carry water which is not to be drunk and other liquids, a less expensive grade of polyethylene was introduced. This pipe, variously called irrigation grade, or industrial grade, is made from reprocessed resin—polyethylene which has

been used before in some other application.

Because reprocessed resin is a blend of diverse types of polyethylene and because chemicals are sometimes added to make the blend, reprocessed pipe may contain toxic materials. For this reason, reprocessed pipes are never recommended for use with drinking water, and all reputable manufacturers make this clear in their literature.

The short term physical properties of reprocessed pipe, as determined in the laboratory, are the same as those of virgin pipe. Field experience, however, has shown that the rate of failure is greater than that of virgin pipe.

Part of this is undoubtedly due to the fact that some of the material going into reprocessed pipe may be degraded (already broken down chemically). Pipe producers without laboratory facilities to test their



LAYING long continuous lengths of piping is said to be easy with flexible polyethylene.

raw material are not able to detect this defective material.

Use nothing but virgin material where the water is to be
(Continued on next page)

WAGNER ELECTRIC MOTORS...THE CHOICE OF LEADERS IN INDUSTRY



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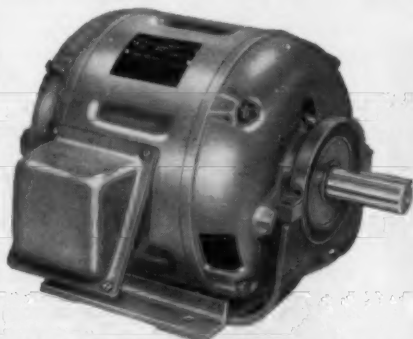
Circulating pumps used in hot water heating systems must be silent—vibrationless in operation, since they are the connecting links between the boiler room and the structure itself. A prime requirement for quiet pump operation is an electric motor that operates almost silently, yet has plenty of stamina to hold up under years of hard, steady operation.

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Standard resilient mounted Wagner Motors, up through 5 hp, can be used for special applications where extremely quiet operation is demanded. Sleeve or ball bearings.



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M57-7

Corrosion --

(Continued from preceding page)
drunk. (Home sprinkling systems are usually required, by code, to have a vacuum breaker which will prevent water in the system from backing up into the water supply; if this is not the case, use virgin even for a sprinkling system).

Where To Use Reprocessed Pipe

Reprocessed pipe may be used for non-drinking water supply, for irrigation and sprinkling, for air, gas, or chemical supply lines. If the installation is such that the plastic will be operating at the optimum conditions recommended for virgin polyethylene, use virgin even if drinking water is not involved.

In an ice skating rink, for example, even though only brine at low pressure is passing through the coils, the conditions of repeated freezing, of seasonal take-up and lay-down are so severe as to warrant the use of virgin pipe which has proven superior aging properties.

Reprocessed Pipe Will Fail In Hard Usage

Similarly, in cooling towers where there is a high head pressure and where extreme weathering of the exposed pipe is likely, use virgin. Remember always that the irrigation grade or reprocessed pipes are a price item — entirely suitable for

many applications, but not to be used where price alone is the factor.

The use of reprocessed pipe in severe service will cause failure and will lead to the condemnation of plastic pipe in general, thus discouraging further consideration of profitable and advantageous uses of the material.

(Because of polyethylene's good physical properties at low temperatures, one refrigeration man asked if it could be used as an evaporator coil. Even assuming that the low thermal conductivity could be overcome — as it is for practical purposes in skating rink and radiant heat uses — the fact is that halogenated hydrocarbons like the "Freons" are among the very few chemicals which will slowly attack polyethylene causing it to swell and lose its strength.)

Flexible polyethylene pipe is supplied in standard dimensions, Schedule 40, IPS. In these dimensions, the recommended working pressures differ considerably for each pipe diameter. Unlike iron pipe and the rigid plastic pipes which will be discussed in the next article, polyethylene is fitted with insert type fittings and secured with a hose clamp.

By holding the ID constant to accommodate the insert type fittings, and by changing the wall (and therefore the OD), it is possible to get "pressure rated" polyethylene pipe in which all the pipe diameters for a given

rating will have the same recommended working pressures. The common working pressures are 75 lbs., 100 lbs., and 125 lbs.

Depending on the intended use, it is usually possible to save money by watching the recommended working pressures for the pipe. For example, if the working pressure is less than 75 lbs., it is more economical to buy 75-lb. pressure rated pipe in 1/2 in., 3/4 in., and 1 in. But buy standard schedule 40 pipe above 1 in.

The greatest disadvantages of polyethylene pipe are its relatively low working pressures and temperatures when compared to metal pipe. The usual recommended working temperature range is from -90° to 125° F. Under low pressures, when engineered and installed properly, polyethylene has been in service for several years with intermittent temperatures of 160° F.

A related disadvantage is the fact that the working pressure drops rapidly as the temperature rises within the recommended temperature range.

Frequently Misapplied

Due to the lack of a long history, polyethylene pipe is frequently misapplied and often oversold. On the other hand, many companies have never had a pipe failure which was not due to such misapplication or abuse. Polyethylene burns and is not approved by Underwriters for indoor water supply.

In spite of the disadvantages, polyethylene is increasingly being used in plumbing and heating and in general industry. The refrigeration serviceman may begin with simple uses like cooling towers, water supply lines, or even a short plastic nipple in a metal line to break electrical continuity.

(To Be Continued)

Lilygren, Fenn Upped In Carrier Positions

SYRACUSE, N. Y. — Two executive promotions at Carrier Corp. were announced by Cloud Wampler, chairman of the board.



George Lilygren, vice president and general



C. V. Fenn, manager of the Machinery & Systems Div., has been placed in charge of the G. N. Lilygren newly-formed Corporate Development Div. Lilygren will be responsible for Carrier's integration and acquisition program.

Charles V. Fenn, vice president and assistant general manager of the Machinery & Systems Div., has been named general manager to succeed Lilygren.

How to balance air conditioning, heating and ventilating systems with the **NEW**



AIR METER

Color-coded pushbuttons put air velocity, air temperature and static pressure at your fingertips in the new Model 60 Anemotherm Air Meter. Developed by the Anemostat Corporation of America, this versatile, accurate instrument helps you balance and check any air system. It pays for itself through time saved on only one major job.

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It's the new "Serviceman" maximum pressure gauge...

Another example of Marsh coming up with an ingenious idea to make refrigeration servicing easier and better!

This time it's a new type of maximum pressure gauge — a gauge that shows top pressure with extreme accuracy, whether you make a short test or leave it over night.

The secret is a check valve that traps the pressure in the bourdon tube until you release it with that handy push button. Then the pointer jumps back to zero. It's so convenient and useful you'll wonder how you ever got along without it!

This Marsh innovation is incorporated in the highly accurate deluxe "Serviceman" testing gauge with 400 lb. scale... dressed up in a handsome, polished brass case with a knurled screwed ring which gives quick access to the Marsh "Recalibrator" to keep it always accurate.

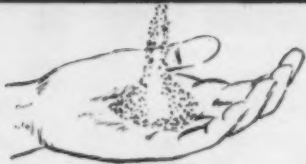
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and it can be done economically!

Watch the NEWS for more news!

Monthly Heating, Cooling Costs--

(Concluded from Page 1)

U. S. Housing & Home Finance Agency. Thulman said the average American home of 1,000 sq. ft. should be heated and air conditioned all year for an average cost of \$10 a month.

Intrigued by this statement, Owens-Corning engineers under Tyler S. Rogers, the company's technical consultant, began a study of American dwellings basing their calculations on 1,200 sq. ft. of floor space, "today's national average," and concluded that the target figure of \$10 might be achieved if the houses were built to conform to "comfort engineering" principles instead of FHA minimum property requirements.

These "comfort engineering" principles include use of maximum insulation, adequate attic ventilation, outside shading of sunny windows, and, whenever possible, design of the house so that large glass areas face north and south.

Some 65 utility companies and 160 builders in 81 cities in 29 states are cooperating in the program. The builders submitted their house plans to Owens-Corning's engineers who made suggestions, as necessary, to insure that the plans would conform to "comfort engineering" principles. The utility companies agreed to install submeters so that costs of heating and air conditioning could be isolated.

In the study of the first 120 houses, Owens-Corning has also predicted heating and cooling savings averaging more than 25% for the "comfort engineered" dwelling when compared with those constructed to meet only FHA minimum property requirements.

Owens-Corning expects "several significant conclusions" as a result of this program.

It believes that through savings realized in heating and cooling costs, air conditioning is now within the financial reach of most American families. It points out that houses built to conform to "comfort engineering" principles will require smaller size heating and air conditioning units and the resultant savings will pay for the

cost of the insulation in a few years.

It also believes that a house including air conditioning equipment can sell faster and should be more favorably considered for financing by banks, savings and loan associations, insurance companies, and others.

Rogers considers the "comfort" aspect of the program to be as important as the savings. "In fact," he says, "comfort engineering principles produce double benefits because comfort goes up when heating and cooling costs go down."

Sumter Firm Opens

SUMTER, S. C.—Sumter Refrigeration and Air Conditioning Sales & Service, commercial and domestic firm, has opened for business at 6 Camellia Rd. Leland F. Robertson is the owner.

Beverage-Air ICE CREAM MIX and BULK COOLERS

Illustrates one Pump and Jar arrangement available on MS48-S

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Capacity and durability combined with positive, low cost cooling. Widest range of remote or self-contained models. Reinforced stainless steel tops — plain or with various pump and fruit jar arrangements. Hold 5 and 10 gal. cans with no lost space. Refrigerated "Utility" compartment for extras.

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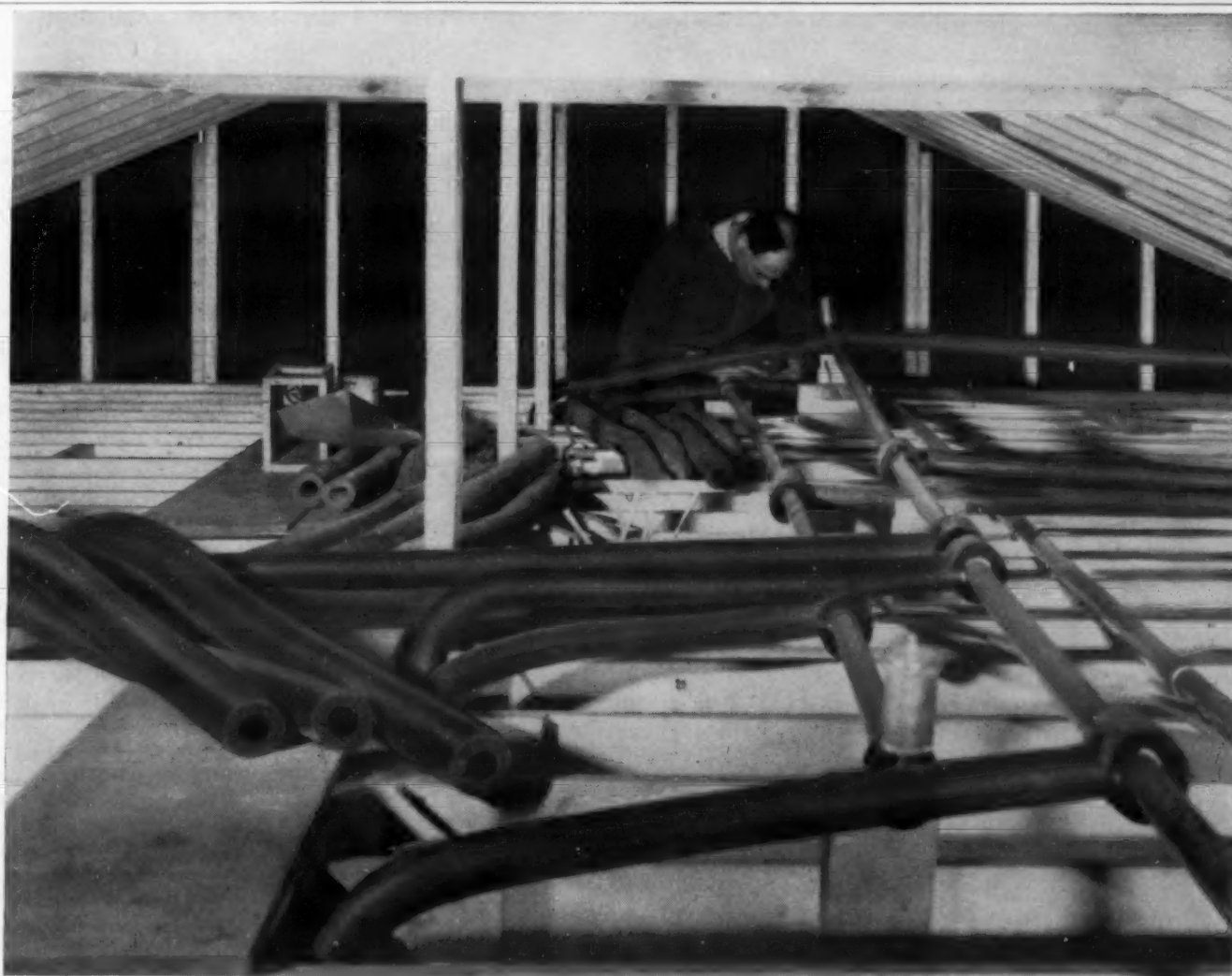
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CONDENSATE PUMPS

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ANDY ARMAFLEX says:



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Now you can install liquid cooling-heating systems without fear of trouble from condensation. Just apply Armstrong Armaflex®, then walk away from the job and forget it. Armaflex is a remarkable new pipe insulation. Its closed cell structure is a positive vapor barrier, seals out air and moisture on cooling lines. On the heating cycle, Armaflex withstands 200° F.

You'll find Armaflex is especially fast and easy to install, too. It's a highly flexible material that slips right over pipes and copper tubing before connections are made.

If lines are already in operation, just slit Armaflex lengthwise, snap in place, and seal with Armstrong 520 Adhesive. Fittings are easily insulated with miter-cut pieces cemented together. Armstrong Armaflex comes in 6' lengths, for pipes and tubing up to 3 1/2" o.d.

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NWAHACA Technical Conference--

(Concluded from Page 1)
dential air conditioning, Rogers contends.

Four technical sessions held during the two-day conference covered many aspects of residential air conditioning, such as estimating operating costs, humidity problems, refrigerant flow controls, air cleaning, sound control, attic ventilation, and cooling the upstairs.

Discussing the "House of the

Future," William H. Scheick, executive director, Building Research Institute, declared that "it looks to me as if we may be headed toward all-electric energy with nuclear fuels in common use. If so, why won't we go to the heat pump? And why won't we store summer heat in the ground to be used in the house again the next winter?"

Commenting that "year-round air conditioning looks like a sure bet considering the standards of comfort demanded by the public," Scheick pointed out that the air conditioner evidently "will have to be above or below and outside the living space."

Sees Frameless Houses Coming

"The structure of many mass-produced houses will probably be frameless," he predicted. "Many types of panels will be available which can be combined in many ways to give far greater variety to the pre-fab house than we know today. Most panels will consist of exterior and interior 'skins' bonded to 'cores' of honeycomb or foamed materials. The skins may be of plastic, metal, hardboards, chipboards, or plywoods processed to give the best performance for exterior or interior conditions."

Ductwork for air conditioning will probably be built into the panels, he said.

The question of operating

costs of air conditioning was discussed in two papers: the "climatic factor" by H. C. S. Thom, chief climatologist, U. S. Weather Bureau, and the "human factor" by Ralph A. Gonzalez, director of technical services, Airtemp Div., Chrysler Corp.

'Sentient Temperature'

A new temperature index labeled "sentient temperature" for measuring the need for cooling was proposed by Thom to relate the discomfort we feel to both dry-bulb temperature and relative humidity.

Closely related to "effective temperature," the "sentient temperature" scale is more consistent with the dry-bulb temperature scale, Thom contends. He defines "sentient temperature" as "a temperature which consists of the dry-bulb temperature plus an additional number of degrees which measure the effect of humidity."

Wide variations in air conditioning operating costs among identical houses in "tract" developments were disclosed by Gonzalez in revealing results on studies in New Jersey, Oklahoma, and Texas.

While operating costs can vary due to differences in house constructions, orientation, etc., and type and size of equipment used, homeowners also differ widely in the way they use air conditioning, Gonzalez indicated. Lowest users of power for air conditioning consume less than half as much electricity as the highest users, he revealed.

The study, which was made by comparing electric consumption, also showed no relationship between air conditioning use and over-all power use by the homeowners, Gonzalez pointed out. Biggest users of electric power generally were not necessarily biggest users of air conditioning, he found.

Theoretical analysis of the problem of cooling the upper floor in split-level and two-story houses would indicate that greater attention must be paid to the gravity effect of cold air flowing downward, according to Prof. S. Konzo of the University of Illinois.

Greater air supply to the second floor or upper level appears necessary, and good diffusion of air from registers with room air, especially on the upper level, seem essential to overcome this problem, Prof. Konzo indicated.

In another paper reporting results of using forced attic ventilation to reduce the heat gain on ceiling, D. R. Bahnfleth and J. R. Wright of the University of Illinois said such ventilation had relatively small effect on the cooling load and comfort conditions.

The house in question (Research Residence No. 2 at the university) had good natural ventilation of the attic, which

was also well insulated. Effectiveness of forced attic ventilation would probably be more pronounced, they said, in houses having less natural ventilation of the attic and less insulation.

Drawing on research conducted some years ago for the American Gas Association, Dr. S. C. Hite, head of the Chemical Engineering Dept., University of Kentucky, told the conference how much moisture is released in a home by such everyday operations as clothes washing and drying, food preparation, dishwashing, floor mopping, bathing, and the like.

Ventilation of the kitchen, where the humidity problem is generally most serious, can be an effective means of reducing the moisture buildup, Dr. Hite indicated.

Return Ducts Seen As Noise Problem

"The most acute noise problem in residential heating or cooling installations today is a result of the commonly used, cost-saving, through-the-wall short return air duct," declared Warren Blazier, research engineer of the Coleman Co., Inc.

"Even potentially quiet equipment is severely penalized in installations of this type," he said. "The noise on the discharge side of the system is something over which we have more control. It certainly is not a problem of the same magnitude as the short return."

Acoustically treated blower and return air compartments combined with a 3-ft. acoustically lined return will greatly reduce air noise, according to Blazier. He pointed out, however, that the humming or whining pitched type of sound that can occur with heating and cooling equipment has to be engineered out of the product because it can't be handled in the field.

Refrigerant flow controls were discussed by two speakers. Edward P. Mikol, senior research engineer, Carrier Corp., presented an over-all review of capillary tubes, and John A. Schenk, director of engineering, Alco Valve Co., gave a detailed description of the design and operation of thermostatic expansion valves.

Final session of the conference was a symposium on air cleaning with three speakers.

Viscous impingement mechanical type filters were discussed by Dale O. Bender, chief sales engineer, Research Products Corp.; charged-media air cleaners by E. M. Evans, technical director, Amer Glass Div., American Air Filter Co.; and electrostatic air cleaners by George F. Landgraf, vice president, Trion, Inc.

In other talks, F. L. Meyer, president of the National Warm Air Heating & Air Conditioning Association, cautioned the group

that "to be truly effective for the future, our research work must be out ahead of our current practices and problems of the industry. . . . It must even now be dealing with what it appears will be the problems and practices of five, 10, even 20 years from now."

Fire Protection Group To Cover Cooling May 20-24

BOSTON — Air conditioning and cooling towers will command the attention of delegates to the 61st annual meeting of the National Fire Protection Association, to be held May 20 through 24, in the Statler hotel, Los Angeles.

Among talks slated for the 6th general session on Friday morning, May 24, will be a report on air conditioning and ventilating systems by F. H. Faust, and a report on building construction operations and cooling towers, by Edwin L. Searl.

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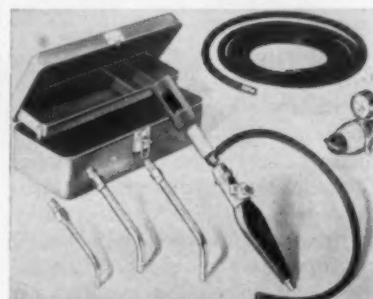
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Standard Leak Detector Stem (right) in this outfit instantly detects as little as 100 parts per million of halide refrigerant gas in air.

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21 Publish Room Unit Ratings--

(Concluded from Page 1, Col. 5) not yet done so are said to be ready to join the program.

All of the complying companies have published their ratings in consumer literature, specifications sheets, advertisements, news releases, or by filing them with the ARI offices for publication.

The complete list of ratings will be published in the next (May 20) issue of the NEWS. This listing will bring up to date a list published in the Feb. 18 issue of the NEWS. Some ratings published at that time have been revised either upward or downward, and some companies have added new models.

These ratings are arrived at by tests conducted by the manufacturers themselves in accordance with the ARI standard.

Manufacturers who have published their ARI standard ratings are:

Admiral Corp.
Airtemp Div., Chrysler Corp.
Carrier Corp.
Emerson Electric Mfg. Co.
Emerson Quiet-Kool Corp., subsidiary of Emerson Radio & Phonograph Corp.
Friedrich Refrigerators, Inc.
Frigidaire Div., General Motors Corp.
General Electric Co., Room

Air Conditioner Dept.
Hotpoint Co.
Hunter Div., Robbins & Myers, Inc.
Hupp Corp., Gibson Div.
Perfection Div.
Kelvinator Div., American Motors Corp.
Lonergan Coolerator Div., McGraw-Edison Co.
(Coolerator and Manning-Bowman lines)
Mathes Co., Inc.
Mira-Cold Corp.
(Sears Roebuck & Co.)
O. A. Sutton Corp.
Welbilt Corp.
Westinghouse Electric Corp.
Whirlpool Corp.
York Corp., subsidiary of Borg-Warner Corp.

While agreeing that cooling capacity is not the only sales feature or basis of comparison between competitive models, ARI believes that with ratings determined according to a single standard, prospective buyers will have a more definite measure of performance by which to judge.

Management Group To Honor Ruthenburg

EVANSVILLE, Ind. — Louis Ruthenburg, chairman of the board of Servel, Inc. will receive a "Gold Knight of Management" trophy at a testimonial luncheon in Dayton on May 26.

The award will be made by the Southwestern Ohio Council of the National Management Association, representing 5,000 members in the Dayton area.

Ruthenburg, who will be the first recipient of the "Gold Knight" award, is credited with being the founder of the NMA movement, an outgrowth of the first foreman's classes which Ruthenburg organized.

NEMA Estimates February Freezer, Refrigerator Sales

NEW YORK CITY—Total industry sales of electric household refrigerators for February were estimated at 298,700 units, a drop of 6% from the same month last year, according to the National Electrical Manufacturers Association.

February sales of home freezers totaled 73,400, which is a 13% decline from the 1956 figure.

Sales for the first two months of 1957 showed refrigerators at 604,100 units, 20% below 1956. Freezers suffered a drop of 12%, with a two months' total of 141,800.

These figures are based upon expansion of data reported to the NEMA Statistical Dept. to cover total industry sales.

Demand Charge--

(Concluded from Page 1, Col. 3)

The committee's action followed protests by businessmen and representatives of the air conditioning industry. The recommendation will be reviewed by the council at its May 14 meeting.

Intended to discourage use and installation of air conditioning equipment which does not conserve water by recirculating it, the ordinance would impose a charge of \$20 a ton of rated capacity each year on units over 3 tons which do not have a water conserving device. This would be in addition to the regular water charge. It would also prohibit systems in which the rate of use exceeded 1.75 g.p.m.

"If these air conditioners are not controlled," Mayor Zeidler said, "then the work we are doing now will have no good. If we can't get a conservation ordi-

nance, it would be better to have absolute prohibition of devices that waste water."

Supporting the mayor's remarks, Arthur Rynders, waterworks superintendent, said pumping capacity would fall further behind demand, despite the expansion program, if the ordinance was not adopted.

The ordinance was recommended by Black & Veatch, Kansas City, Mo. waterworks consultant to the city.

J. D. Johnson Heads Rochester ASRE

ROCHESTER, N. Y. — New officers were installed at a meeting of the Rochester Section, American Society of Refrigerating Engineers.

They were James D. Johnson, chairman; Owen H. Hellekson and L. C. Engelhart, vice chairmen; Henry J. Dyminski, secretary; and Stanley J. Stachelek, treasurer.

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More display in the same floor space!

Every inch of display space added to a food store means more profit. Warren's handsomely styled new MASTER MERCHANDISERS with Merchandising Canopies add display space without increasing floor space by even one inch. Not only is there maximum-cube frozen-food display, with seven packs front to back, but there are full-volume grocery shelves, too. Both shelves of Warren's Merchandising Canopy are adjustable to three positions, with a third shelf formed by the case top itself. These canopies are used with Warren's Master Merchandisers for meat and produce as well as the MULTI-CASE for frozen foods illustrated here.

For more detailed information about all styles of Warren Master Merchandisers, write, wire, or call . . .

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Al Greenfield, Maintenance Supervisor, Penn Fruit Company

Keeping the air conditioning and refrigeration equipment running smoothly in a 46-store chain of super markets with annual sales in excess of \$134 million is Al Greenfield's job. As part of his well planned preventive maintenance program, Mr. Greenfield has been using Calgon's Big 3 cooling water treating products in the air conditioning equipment in 42 of the Penn Fruit stores. His experience with Calgon products has been excellent, and he states that very satisfactory operating conditions are being maintained. The use of Micromet® Plates and Calgon® Algaecide, in combination with proper bleed, has kept lime deposits and algae under control. Service calls are sharply reduced and equipment is safeguarded. Calgon's Big 3 keep air conditioning and refrigeration systems at top efficiency and protect costly equipment. Here is how they work.

Micromet Plates provide continuous treatment to inhibit further scale formation. A single charge will last about six months and the inexpensive feeding bag is easily installed.

Calgon Algaecide controls algae and slime growths. It comes in pellet form for convenience in handling. Positive action kills the growth. Periodic addition keeps equipment operating efficiently.

Calgon Scale Remover makes it easy to clean up a system completely. Corrosion inhibitors protect system while in use. Special built-in pH color indicator shows how much of scale remover to use, and helps tell when system is clean.

SEE YOUR REFRIGERATION WHOLESALER FOR CALGON'S BIG 3!

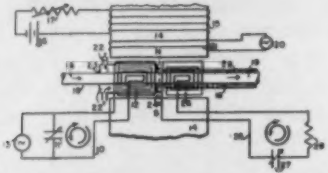


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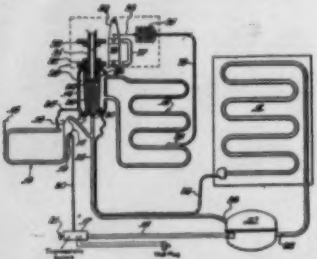
PATENTS Week of February 5

2,730,069. ELECTROMAGNETIC ENERGY CONVERTER FOR A HEAT PUMP. Bernard Olcott, Fort Worth, Tex. Application March 12, 1954, Serial No. 417,986. 12 Claims. (Cl. 62-1.)



1. An energy converter comprising a medium, a magnet having a polarizing field in proximity to the said medium, means for selectively providing an alternating electromagnetic field through the said medium in a direction which is perpendicular to the polarizing field produced by the said magnet, means for removing generated heat from said medium, a resonant circuit having an energy dissipating element, means for selectively coupling the said resonant circuit to said medium, whereby the medium is cooled when the influence of the said alternating electromagnetic field is removed from the said medium and the influence of the said resonant circuit is established upon the medium.

2,730,072. TWO-TEMPERATURE REFRIGERATION SYSTEM. Milton Y. Warner, Evansville, Ind., assignor, by mesne assignments, to Whirlpool-Seeger Corp., a corporation of Delaware. Application Oct. 27, 1955, Serial No. 543,225. 4 Claims. (Cl. 62-4.)

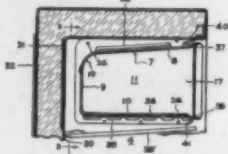


1. In a household refrigerator having an above-freezing food chamber and a below-freezing frozen food chamber, a refrigeration system including a plate evaporator provided with sinuous coils and located in said above-freezing food storage chamber, an accumulator, the said evaporator having its tube ends connected to said accumulator, a freezing evaporator, said freezing evaporator having a receiver at its suction outlet and being located in said below-freezing chamber, a motor compressor having its outlet connected to a condenser, a capillary tube leading from said condenser to said accumulator and forming a restrictor, said capillary tube being in heat conducting relation with said suction tube leading from said receiver to said motor compressor inlet, and a second capillary tube extending from the outlet of said freezing evaporator to the lower end of said receiver, a cold control comprising a thermostatic switch controlling the circuit of said motor compressor and having a bulb in heat conducting relation with the outlet of said below-freezing evaporator, a suction pipe connection from said suction pipe to a valved conduit in said receiver, said valved conduit having a valve seat and a paramagnetic valve plunger, said plunger engaging said valve seat at a port communicating with the interior of said accumulator, and said plunger being reciprocally mounted in a closed tube extending from said receiver, a magnetic core having a pair of annular poles surrounding said tube and adapted to act on said plunger, and a thermostatic member responsive to temperature of said above-freezing evaporator for moving a magnet and causing polarization of said poles to act on said plunger and open said valve, the said evaporators being connected in parallel by said suction tube, receiver, and capillaries so that heat removed from either evaporator may be carried back directly to the compressor inlet to increase its efficiency.

2,730,075. FREEZER COMPARTMENT FOR HOUSEHOLD REFRIGERATOR. Donald E. Milliker, Louisville, Ky., assignor to General Electric

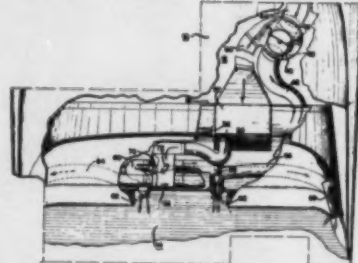
Co., a corporation of New York. Application July 13, 1955, Serial No. 523,519. 6 Claims. (Cl. 62-39.)

3. A refrigerator cabinet comprising a liner defining a food storage compartment and a freezing compartment in said food storage compartment including side, bottom, rear and top walls, said freezer compartment com-



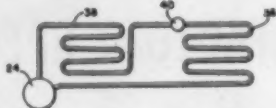
prising a C-shaped refrigerant evaporator of high heat conductivity material forming the top, rear and bottom walls of said freezer compartment and support members of low heat conductivity material secured to the side walls of said liner, each member including a shoulder defining a vertical section in spaced relation with the adjacent liner side wall, said vertical sections forming the end walls of said freezer compartment, and projecting means spaced from said shoulders and defining with said shoulders recesses for receiving the top and bottom side edges of said evaporator.

2,730,076. AUTOMOBILE REFRIGERATING APPARATUS. Robert P. McLean, Oak Park, Mich., assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Jan. 14, 1953, Serial No. 331,375. 4 Claims. (Cl. 62-117.1.)



4. In combination, a vehicle having a passenger compartment provided with front and rear seats, panel means adjacent the front of said vehicle, refrigerating apparatus including an air cooling coil for cooling said passenger compartment, means for circulating air to be conditioned in thermal exchange relationship with said coil, duct means in communication with said air circulating means having a plurality of air outlets for distributing said air within said passenger compartment, air deflector means for a first pair of said outlets mounted on said panel means and having adjustable deflectors for directing air at various angles relative to occupants of said front seat, a second pair of said outlets having fixed grill means supported on said panel means for directing air along opposite sides of occupants of said front seat for cooling the passengers in the back seat, and another of said outlets directing a stream of air downwardly towards the floor of said passenger compartment.

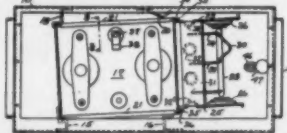
2,730,077. VEHICLE REFRIGERATING APPARATUS. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application July 21, 1954, Serial No. 444,838. 4 Claims. (Cl. 62-117.1.)



1. In a self-contained air conditioning unit for use in passenger automobiles or the like, the combination, a casing, an evaporator in said casing, a condenser in said casing, means dividing said casing into the evaporator compartment and a condenser compartment, a compressor secured to said casing, means for transmitting power from the engine of said automobile to said compressor, refrigerant flow connections between said evaporator, compressor and condenser, means for introducing fresh air into the said condenser compartment, means for selectively directing the air leaving

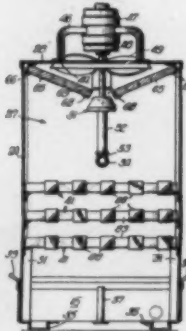
said condenser compartment either into said passenger compartment or into the outside atmosphere, means for selectively introducing either fresh air, recirculated air or a mixture of both into said evaporator compartment, blower means for facilitating the flow of air through said evaporator and condenser compartments, and means for directing the air flowing over said evaporator into said passenger compartment, said blower means comprising a pair of blowers operated by a common motor disposed between said evaporator and said condenser.

2,730,305. ELECTROSTATIC PRECIPITATORS. Richard T. Bonatz, Woodward, Mass., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Dec. 1, 1953, Serial No. 395,454.



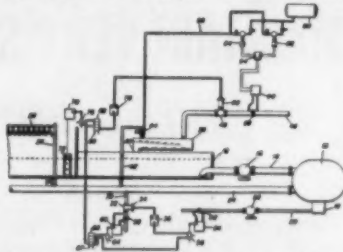
1. An electrostatic precipitator comprising a casing having a gas inlet and a gas outlet, an access panel for attachment to a side wall of said casing extending between said inlet and outlet, said casing having a lower wall with cell supporting rails thereon extending from adjacent said side wall to adjacent the opposite side wall, a collector cell slidably supported on said rails, ionizer supporting members extending from the top and bottom of the upstream end of said cell towards said inlet and between said side walls, and an ionizer assembly slidably supported by said members, said cell and assembly being insertable into and removable from said casing through said one side wall when said access panel is removed.

2,730,306. COOLING TOWER. John R. Boyle and John B. Boyle, Jr., Chicago, Ill. Application Aug. 31, 1953, Serial No. 377,502. 12 Claims. (Cl. 183-14.)



1. In a cooling tower of the class described, the combination of a spray chamber, air impelling means for circulating air through said chamber, an electric motor for driving said air impelling means, a water supply header for supplying water to said chamber, a rotary conical spinner driven by said motor receiving the water from said header, and a water suspension cell in said chamber receiving the spray water from said rotary conical spinner and through which the impelled air is adapted to pass, said water suspension cell comprising an open frame, and a tubular band of woven plastic material wrapped spirally around said frame with the edges of adjacent convolutions spaced from each other.

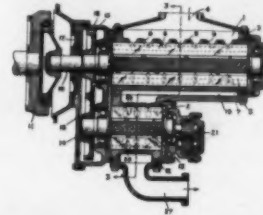
2,730,357. FLOW CONTROL AND TREATMENT OF CONDENSER COOLING WATER MAKE-UP. Elbert W. Robinson, Amarillo, Tex. Application Sept. 14, 1953, Serial No. 379,850.



1. A cooling system including, a reservoir of cooling medium, a spraying means for the medium to lower its temperature by evaporation, a heat exchanger supplied by the medium to absorb heat from a fluid flowing through the exchanger, a meter for the cooled fluid out of the exchanger as a measure of the medium evaporated by spraying to dissipate the heat absorbed, a supply of cooling medium conducted to the reservoir, a meter for the cooling medium supplied to the reservoir, a valve controlling the cooling medium supplied to the reservoir and adjusted by the meter for the cooled fluid, a source of chemical which will neutralize characteristics of solids in the medium not removed by evaporation, and a regulator controlling the chemical added and adjusted by the meter of the cooling medium supplied the reservoir.

2,730,406. ROTARY COMPRESSOR. Harry A. Feldbush, Short Hills, N. J., assignor to Worthington Corp., Hudson, N. J., a corporation of Delaware. Application April 21, 1953, Serial No. 350,091. 5 Claims. (Cl. 230-158.)

4. In a flooded type rotary compressor utilizing lubricant fluid as the cooling medium for the fluid to be compressed, a low compression stage including a cylinder, a rotor eccentrically mounted therein and slidable vanes carried by said low stage rotor,



a high compression stage including a cylinder, a rotor eccentrically mounted therein, and slidable vanes carried by said high stage rotor, and means for rotating said rotors; said cylinders spaced from each other and in superposed parallel axial relation, oppositely spaced walls between said cylinders,

an interstage pressure fluid chamber formed by the outer surfaces of said cylinders and said spaced walls, said low compression stage cylinder having a downwardly disposed discharge opening communicating between a lower portion thereof and the interstage pressure fluid chamber and said high compression stage cylinder having a downwardly disposed inlet opening communicating between the lower portion of said interstage pressure fluid chamber and said high compression stage cylinder, said high compression stage cylinder having an outlet means for conveying compressed fluid.

2,730,415. HEAT PUMP OPERATED SYSTEM FOR HOUSE HEATING. Fraser W. Gay, Metuchen, N. J. Application Feb. 23, 1952, Serial No. 273,124. 8 Claims. (Cl. 237-2.)

3. In a house heating system, an electrically operated heat pump including an evaporator and a condenser.

(Continued on next page)

Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

NOTICE TO SMALL FIRMS

Contracting Division, Webb Air Force Base, Texas. INSTALLATION OF AIR CONDITIONING UNIT in Class Room Bldg., Webb Air Force Base, Texas—Job—IFB 41-639-57-29—Bid Opening 17 May 57.

Contracting Office, Bldg. 48-C, Fort Sheridan, Ill. ALTERATIONS TO HEATING SYSTEM Bldg. 216 and 440 at Fort Sheridan, Ill.—Job—IFB AV-11-074-57-56—Bid Opening 24 May 57. Bid Sets available until 18 May 57 unless previously exhausted.

HQ. Oklahoma City Air Materiel Area Tinker Air Force Base, Okla. Attn.: Procurement Division, OCPSC. AIR CONDITIONING OF BUILDING No. T-4004, Tinker Air Force Base, Okla.—Job—IFB 34-601-57-402B—Bid Opening 14 May 57. Plans and specifications available on request.

Commanding Officer, Ships Parts Control Center, Mechanicsburg, Pa. REFRIGERATOR, MECHANICAL, self-contained, Type II, size 16, in accordance with Spec. MIL-R-1834 except as modified or amplified in Schedule of IFB (QPL)—4 ea.—IFB 104-689-57—Bid Opening 10 June 57.

NAVY

Commandant of the Marine Corps, Washington, D. C., Code (CSG) REFRIGERATOR, ELECTRIC, self-contained, commercial, right and left hand door, Type II, Size 60, Fed. Spec. AA-R-211C and Amend. 1 with exception—12 ea.—IFB 312B—Bid Opening 16 May 57.

ARMY

Purchasing and Contracting Office, Fort Benning, Ga. AIR CONDITIONING POST DENTAL CLINIC BUILDING No. 66, Fort Benning, Ga.—Job—IFB 57-187B—Bid Opening 21 May 57.

Contracting Office, U. S. Military Academy, West Point, N. Y. CONVERSION FROM COAL TO OIL FIRED FURNACES Bldgs. Nr 654, 660, 666, 721, and installation of new oil fired boiler Bldg. 670—Job—IFB MA 30-145-57-285B—Bid Opening 29 May 57. Deposit of \$10 in form of money order or certified check made payable to Treasurer U. S. will be required for plans and specs.

Purchasing and Contracting Office, Valley Forge Army Hospital, Phoenixville, Pa.

INSTALLATION OF STEAM HEATING SYSTEM—Job—IFB MD-36-049-57-35—Bid Opening 20 May 57—Specs. available 14 May 57.

District Engineer, U. S. Army, Engineer District, Philadelphia, P.O. Box 8629, Philadelphia, Pa.

CONSTRUCTION OF MODIFICATIONS TO THE AIR CONDITIONING SYSTEM in the Operations Building addition at Palermo Air Force Station, N. J.—Job—IFB ENG 36-109-57-67—Bid Opening 24 May 57. Bid sets available 7 May 57.

Ft. Huachuca Procurement Office, U. S. Army Signal Supply Agency, P. O. Box 748, Ft. Huachuca, Ariz. FURNISHING AND INSTALLING TEN EVAPORATIVE COOLERS, from 3,000 to 15,000 CFM capacity, including Nec. Ductwork, etc.—Job—IFB SC-36-039-57-242B—Bid Opening 28 May 57.

Purchasing and Contracting Division, Fort Riley, Kan. REPLACEMENT OF HEATING BOILERS at Fort Riley, Kan.—Job—IFB AV 14-040-57-67—Bid Opening 28 May 57.

AIR FORCE

Air Force Cambridge Research Center, L. G. Hanscom Field, Bedford, Mass. AIR CONDITIONING WING B, Bedford, Mass.—Job—IFB 1-604-57-159—Bid Opening 7 May 57.

Purchasing and Contracting Office, Mather Air Force Base, Calif. INSTALLATION OF EVAPORATIVE COOLERS for mezzanine floor, Bldg. 4200, Mather Air Force Base, Calif.—Job—IFB 04-612-57-35—Bid Opening 28 May 57.

Base Procurement Office, Eglin Air Force Base, Fla. INSTALLATION OF AIR CONDITIONING SYSTEM in BUILDING 15, Eglin Air Force Base, Fla.—Job—IFB 08-60-57-464-B—Bid Opening 28 May 57.

Director of Procurement, USAF Academy, Attn.: AASMM-2, Denver 8, Colo. AIR CONDITIONING DEMONSTRATORS—2 ea.—1 item—IFB 05-611-57-85—Bid Opening 30 May 57.

Base Procurement Office, Ellsworth Air Force Base, S. D. AIR CONDITIONING IN ADMINISTRATION BUILDING at Rushmore Air Force Station, Rapid City, S. D.—Job—IFB 39-601-57-77B—Bid Opening 20 May 57.

Purchasing & Contracting Office, Hamilton Air Force Base, Calif. REFRIGERATOR: mech., household, steel outside shell, white a/a finish, compr. method oper., 12 cu. ft., 2 doors, frozen compr., elec. motor dr. 1/4 hp., or equal, comp. to Westinghouse 1957, model TFK-12, w/roll out drawers and automatic defrost—132 ea.—IFB 04-602-57-118—Bid Opening 15 May 57.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region B, Business Service Center, 50 Seventh St., N.E., Atlanta 23, Ga. AIR CONDITIONING COURT ROOM, Judge's suite, and Petit Jury Room, Meridian, Miss. Post Office and Court House—Job—IFB CR4-1648—Bid Opening 5-24-57.

General Services Administration, Business Service Center, Region 3, 7th & D Sts., S.W., Washington 25, D. C. CHILLER, WATER, 15 ton—1 ea.—IFB R2D-85576-R—Bid Opening 5/17/57.

General Services Administration, Business Service Center, Region 3, 7th & D Sts., S.W., Washington 25, D. C. CHILLED WATER SYSTEM, complete, refrigeration unit complete with motor and necessary controls and safety devices, cooling tower, condenser water circulating pump, and 250 gallon storage tank—1 ea.—IFB R2D-85506-R—Bid Opening 5/20/57.

U. S. DEPARTMENT OF INTERIOR

PROCUREMENTS OF \$1,000 OR MORE

Department of the Interior, National Park Service, Independence National Historical Park, 420 Chestnut St., Philadelphia 6, Pa.

REPLACEMENT OF HEATING AND WINTER AIR CONDITIONING SYSTEM, Independence Square Bldgs., Independence National Park, Philadelphia, Pa.—Job—IFB 29-Ind-12—Bid Opening 5-17-57.

Bureau of Public Roads, Equipment, Procurement & Transp. Division, G. S. A. Building, 18th and F Sts., N.W., Washington 25, D. C.

AIR CONDITIONING UNITS, waterless type, for flush-mount installation in double hung windows, width of openings from 27 1/2 to 33", 1 hp., 230 volts, single phase, with automatic thermostatic control, separate exhaust and ventilation controls, and with fresh-air intake on cooling cycle, 1957 Model—5 ea.—IFB BPR-R-15-137—Bid Opening 5-14-57—Delivery 1554 Columbia Pike, Arlington, Va.

VETERANS ADMINISTRATION

Director, Design Service, Veterans Administration, Room 2797, Munitions Bldg., Washington 25, D. C.

ADDITIONS AND ALTERATIONS TO COLD STORAGE PLANT, Spec. No. 5743, at Veterans Administration Hospital, Fort Bayard, N. Mex.—Job—IFB 13-4098—Bid Opening 7-2-57.

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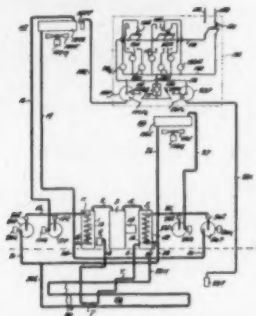
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PATENTS

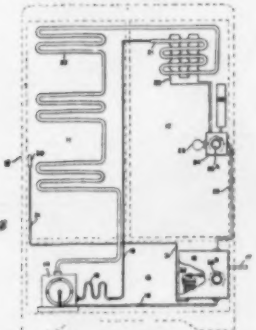
(Week of Feb. 5, Con't)

heat transfer fluid upon which the heat pump operates, a heat storage means provided by the earth beneath the house to be heated and comprising an upper level storage earth area and an underlying lower level storage earth area, heat transfer fluid conducting means comprising an upper section extending through the upper



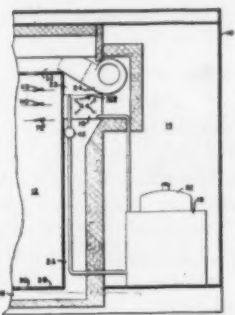
storage earth area and a lower section extending therefrom through the lower storage earth area, means operable during a heat storage period adapted to circulate hot transfer fluid through said conducting means in one direction, a second means operable during a stored heat withdrawal period to circulate cool transfer fluid through said conducting means in the opposite direction, said first mentioned circulating means comprising a means operative to move hot transfer fluid from the heat pump condenser first through the upper section of said conducting means which contacts the upper storage earth area, then on through the lower section of said conducting means which contacts the lower storage earth area and thence back to said condenser, and said second mentioned circulating means comprising means operative to circulate cool transfer fluid from the heat pump evaporator first through the lower section of said conducting means which contacts the lower storage earth area, then on through the upper section of said conducting means which contacts the upper storage earth area and thence back to said evaporator, all whereby said upper storage earth area is maintained at a relatively high temperature and said lower storage earth area is maintained at a relatively low temperature so that heat loss to deep earth is held to a minimum.

2,780,441. AUTOMATIC CONTROL SYSTEM FOR COMBINED FREEZER AND COOLER. Herbert C. Rhodes, Portland, Ore. Application Dec. 31, 1954, Serial No. 476,651. 1 Claim. (Cl. 257-3.)



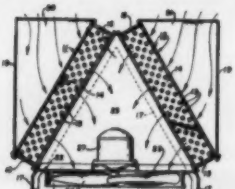
In a combined freezer and cooler of the character described, having a cooling compartment, a freezing compartment, refrigerant coils in said compartments, and a single refrigerant circulation system with a motor-driven compressor for circulating refrigerant successively through the coils of said cooling and freezing compartments, thermostatic means responsive to the temperature in said freezing compartment directly controlling the operation of said motor-driven compressor, whereby to maintain freezing temperature in said freezing compartment at all times, heating means positioned in said cooling compartment at substantial distance from the refrigerant coils in said cooling compartment for raising the temperature of the air in said cooling compartment whenever the operation of said motor-driven compressor causes the temperature in said cooling compartment to fall below a desired minimum, separate thermostatic means responsive to the temperature in said cooling compartment controlling the operation of said heating means, a defrosting heating element located adjacent said refrigerant coils in said cooling compartment, an actuating circuit for said defrosting element, said last mentioned thermostatic means also controlling said defrosting element circuit, whereby the defrosting of said coils in said cooling compartment will occur only when said first mentioned heating means is in operation, and means in said defrosting element circuit between said last mentioned thermostatic means and said defrosting element automatically opening said defrosting element circuit whenever said motor-driven compressor is in operation.

2,780,442. REFRIGERATING APPARATUS. David C. Breeding, Oakwood, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application June 24, 1952, Serial No. 295,185. 9 Claims. (Cl. 257-3.)



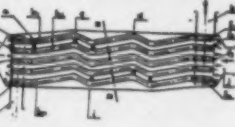
9. In a refrigerating system for refrigerating the contents of a storage space, said system comprising an evaporator, a condenser, a compressor, refrigerant flow connections between said evaporator, condenser and compressor, blower means for circulating air in thermal exchange with said evaporator, a heater arranged in thermal exchange relationship with said evaporator for defrosting the same, control means responsive to a predetermined accumulation of ice on said evaporator for stopping the flow of refrigerant to said evaporator and for energizing said heater while said compressor is still operating, means responsive to the temperature of said evaporator for deenergizing said heater, selector means for selecting the temperature to be maintained in said space, and means responsive to the temperature in said space for controlling said heater in one position of said selector means so as to provide for operation of said heater whenever the temperature in said space decreases beyond a predetermined value.

2,780,445. HEAT EXCHANGE APPARATUS. Arthur B. Rimbach, Cleveland, Ohio. Application Aug. 25, 1954, Serial No. 452,040. 7 Claims. (Cl. 257-137.)



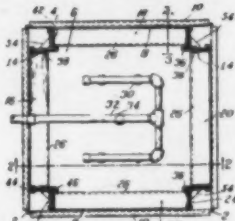
1. Apparatus for heat exchange between atmosphere and fluid bearing heat to be dissipated to the atmosphere, comprising in combination a pair of rectangular banks of coils adapted to contain said fluid, said banks being inclined at an angle to each other, the apex of said angle being disposed uppermost, air-displacement means for moving air downwardly through said banks of coils for heat exchange therewith, the air moved through the respective banks by said air-displacement means being in a fixed proportion, and spaced walls extending upwardly from substantially adjacent the plane passing through the lower edges of the respective banks to substantially a parallel plane passing through the upper edges of the respective banks, said walls providing baffles to bar horizontally moving winds in said atmosphere from direct access to said banks of coils, the baffling of said winds maintaining the said proportion of air moved through the respective banks, each of said banks comprising tubes passing recurrently back and forth in horizontally disposed sections from top to bottom and having a fluid inlet connected to the said tubes of each bank adjacent the top of the bank and having a fluid outlet connected to the said tubes of each bank adjacent the bottom of the bank, whereby downwardly moving fluid in said tubes in heat exchange relationship with downwardly moving air becomes progressively cooled as the fluid progressively moves from section to section of said tubes in its travel from said inlet to said outlet.

2,780,446. HEAT EXCHANGERS. Andre Huet, Paris, France. Application April 28, 1954, Serial No. 426,194. Claims priority, application France March 4, 1953. 4 Claims. (Cl. 257-245.)



1. Apparatus for the exchange of heat between two fluids, comprising a casing, layers of approximately contiguous tubes parallelly disposed inside the casing, the tubes being undulated in a plane perpendicular to the layer, an entrance union and an outlet union for the tubes of each layer, said unions being respectively connected to an entrance header and an outlet header for the fluid circulating inside the tubes, an entrance and an outlet in the casing for the second fluid circulating between the layers of tubes in a direction longitudinal of said tubes and opposite to the circulation inside the tubes.

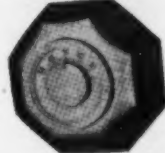
2,780,447. COOLING TOWER. Charles W. Kalthoff, Jr., Knoxville, Tenn. Application March 1, 1955, Serial No. 491,246. 6 Claims. (Cl. 261-111.)



1. A cooling tower comprising a container having side walls and a bottom wall, a plurality of slat panels each of which includes a pair of spaced uprights and a vertical series of inclined slats secured at their ends to said uprights, said slat panels being supported by said container and arranged end-to-end in a closed outline with adjacent ones of said uprights being interlocked, each pair of interlocked uprights including a first upright having outer and inner vertical guideways and a second upright having an outer vertical guideway and an inner flange disposed within the inner vertical guideway of said first upright, and a plurality of corner members each of which includes side portions disposed within the outer guideways of a pair of interlocked uprights to hold said uprights in interlocked relation.

DESIGNS

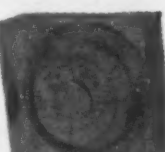
179,642. CONTROL INSTRUMENT. Robert Haven Rose, Mountaineer, N. J., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application May 7, 1956, Serial No. 41,332. Term of patent 14 years. (Cl. D52-7.)



179,643. CONTROL INSTRUMENT. Robert Haven Rose, Mountaineer, N. J., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application May 22, 1956, Serial No. 41,591. Term of patent 14 years. (Cl. D52-7.)

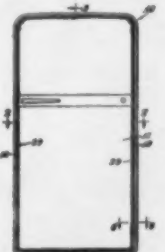


179,644. CONTROL INSTRUMENT. Robert Haven Rose, Mountaineer, N. J., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application June 6, 1956, Serial No. 41,776. Term of patent 14 years. (Cl. D52-7.)



Week of February 12

2,780,345. FABRICATED REFRIGERATOR DOOR. Dave Chapman, Chicago, Ill., and Benton Dales, Henry C. Abrahamsen, and Edward M. Gaul, Evansville, Ind., assignors, by mesne assignments, to Whirlpool-Seeger Corp., a corporation of Delaware. Application Sept. 10, 1953, Serial No. 379,417. 22 Claims. (Cl. 20-35.)



1. A refrigerator door, comprising: an outer panel; an inner panel; insulation disposed between said panels; a separately formed peripherally extending channel-shaped wall member interconnecting outer marginal edges of said inner and outer panels; a peripherally extending angle member adjacent one corner edge of said channel-shaped wall member; and means including a peripherally extending decorative trim disposed adjacent said angle member and removably secured directly between said angle member and said outer panel.

2,780,322. RECEIVER FOR LIQUID REFRIGERANT. Allan N. Johannesen, Framingham Center, Mass., assignor to the United States of America as represented by the Secretary of the Army. Application June 16, 1955, Serial No. 516,055. 3 Claims. (Cl. 62-1.)

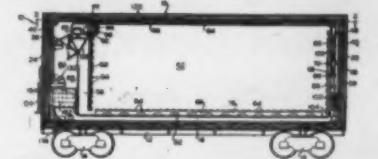


3. A receiver for liquid refrigerant comprising a closed container of substantially V-shape in elevation, an inlet tube connected to the upper wall of the container at its vertex, and an arcuate outlet tube mounted within the container at the vertex thereof, the lower end of said outlet tube being disposed adjacent the bottom wall of the container, and the upper end of the outlet being secured in an opening in a side wall of the container about halfway of the height of said side wall.

2,780,323. METHOD AND MEANS FOR PRESERVING PERISHABLE FOODSTUFFS IN TRANSIT. Frederick M. Jones, Minneapolis, Minn., assignor to Thermo King Corp., a corporation of Minnesota. Application Jan. 14, 1952, Serial No. 286,389. 9 Claims. (Cl. 62-2.)

8. In a transport vehicle embodying an outer shell, a cargo chamber within the shell supported in spaced relationship to the inner surfaces of the shell to form a channel between the shell and the said chamber, said chamber having an opening forming communication between the channel and the interior of the chamber, a movable damper associated with said opening and normally biased to a closed position, a linkage connected to said

damper, manually operable means connected to said linkage for moving said damper only to an open position,



latching means cooperable with a portion of the linkage for holding said damper in an open position, and temperature responsive means operably connected to the latching means and being effective to release the latching means on a lowering of temperature in said chamber to a predetermined lower temperature, said last named means being effective to maintain the latching means inoperative when the temperature in said chamber is maintained at said predetermined lower temperature.

(To Be Continued)

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AIR CONDITIONING and refrigeration engineer returning to U.S.A. after five years' foreign contracting experience. Seven years' export service. Age 32, college graduate B.S.M.E. Wish to settle in Southeast. Good knowledge system design, estimating, selling and installation. Available in July. BOX A5792. Air Conditioning & Refrigeration News.

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HAVE OPENING for 2 experienced servicemen. Commercial only. We furnish truck and guarantee weekly hours. Located in a thriving city and in a shop that invites investigating. Why not look over our proposition. ACE REFRIGERATION SALES & SERVICE, INC., 3763 Broadway, Gary, Indiana.

MANUFACTURERS' AGENTS, one for Eastern territory, the other for Midwestern area; representing well established firm, manufacturing complete line refrigerator hardware, marine hardware and hardware specialties—also high-grade non-ferrous castings. Excellent opportunity. Contact F. F. Renoll, Manager of sales, THE DENT HARDWARE COMPANY, Fullerton, Pennsylvania.

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MANUFACTURER'S REPRESENTATIVE to sell what we sincerely believe to be the finest walk-in cooler and freezer on the market today. Also complete line of top quality commercial refrigeration. Active sales promotion program. Protected territory available. THE C. SCHMIDT COMPANY, 1712 John Street, Cincinnati 14, Ohio.

WANTED: MANUFACTURER'S commercial and industrial air conditioning equipment salesman for New York City area. Must be graduate engineer with several years' selling experience and have a following in the industry. Good salary plus P.S. Plan. TELEPHONE: OXford 7-3758, New York City.

SALESMEN WANTED—To sell commercial barbecue equipment to wholesalers—dealers—supermarkets. \$1,000.00 or more per month, commissions easily obtainable. Write BOX A5751, Air Conditioning & Refrigeration News.

CENTRAL NEW YORK Carrier dealer needs sales engineer to survey, design and negotiate jobs up to 150 tons. No canvassing. Permanent position. Good starting salary with increases based on ability to get things done. All replies confidential. BOX A5790, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED: MANUFACTURER'S surplus, outdated or obsolete refrigeration items—expansion & water & shutoff valves, controls, relays, dehydrators, units, tubing, fittings, etc. All sales on a cash close-out basis, large or small quantity. Write or call: COMMERCIAL CONTROLS CO., 257 East 3rd Street, N. Y. 9, N. Y., OREGON 3-7210.

EQUIPMENT FOR SALE

ATTENTION: OWNERS of Baker compressors and condensers. We carry complete stock of repair parts for all Baker ammonia and Freon compressors and condensers. Valves and ice plant equipment. CENTRAL ICE MACHINE COMPANY, 5014 South 24th Street, Omaha, Nebraska.

CLOSING OUT: A national brand of new refrigeration units 4 and 15 tons at more than 50% off dealer's list price. Also spare parts—condensers, etc. at same low bargain prices. Phone or write for particulars. GROBAN SUPPLY COMPANY, 1139 S. Wabash Avenue, Chicago, Illinois. Webster 9-3793.

NATIONALLY-FAMOUS brand-new condensing units at sensational low prices. ¼ h.p. only \$34.50. Other sizes up to ½ h.p. at equally great savings. Also tremendous values in motor compressor domes. ¼ hp only \$31.00. Complete selection of sizes up to 1½ h.p. All units fully guaranteed. Write for complete description and price list. MANN REFRIGERATION SUPPLY CO., 440 Lafayette Street, New York 3, N. Y. GRamercy 3-8000.

CENTRAL HOME air conditioners: 1½ h.p. self contained \$200. 1½ h.p. remote \$200. 2 h.p. remote \$275. Remote units with condensing section and evaporator coil assembly for furnace plenum. Air cooled. New in original crates. Quantities limited. Write today. BOX A5791, Air Conditioning & Refrigeration News.

BUSINESS OPPORTUNITIES

TAMPA, FLORIDA—Air conditioning heat pump—Well established going business. Owners will sell for \$15,000.00. If you have the know-how in either management—sales—or service, this business will pay for itself this summer. Address owners c/o BOX A5789, Air Conditioning & Refrigeration News.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR, 2833 Lincoln Avenue, Chicago 13, Illinois.

1st Quarter Reports Western 'Selling Show'-- Show Varied Results

DETROIT — Varied results were reported recently by several firms in the air conditioning and refrigeration industry as to sales and earnings in the first quarter of this year.

Hupp Corp. reported net profit, after taxes and extraordinary charges, of \$10,232 in the initial quarter. This compared with a net loss of \$627,000 in the opening quarter last year. Sales for the first '57 quarter totaled \$15 million, compared with \$6,937,000 in the comparable '56 period. It was noted that the sales increase largely reflects acquisition of Gibson Refrigerator Co. whose first-quarter sales were not included in the results last year.

Admiral Corp. sales and earnings for the first three months slumped sharply from the 1956 period but John B. Huarisa, executive vice president, predicted profits for the year should be "substantially higher" than 1956. First-quarter sales slid 13% to \$42,354,139 from \$48,663,959 last year, while earnings dropped 67% to \$427,744 from \$1,310,336.

Wagner Electric Corp. expects 1957 results to about equal last year's record sales and earnings, J. H. Devor, president, indicated. First-quarter earnings this year were equal to \$1.81 a share, up from \$1.38 a year earlier, and sales were \$26,471,647, up 4.3% from the like 1956 period.

Rheem Mfg. Co. has "turned the corner toward a profitable year," says A. Lightfoot Walker, president. First-quarter earnings were \$611,464, down somewhat from \$899,721 in the same period last year.

Pennsylvania Salt Mfg. Co., newly christened Pennsalt Chemicals Corp., refrigerant manufacturer, reported sales of \$19,111,000, up 10.8% over the 1956 period, while earnings reached \$1,035,500, a 15.7% rise.

Whirlpool Corp. sales were approximately \$112 million, an increase of 17% over the first three months of 1956, Elisha Gray II, president, said. Earnings were estimated to be down slightly.

Cutler-Hammer, Inc. reported net profits for the first quarter totaled \$1,629,222, or \$1.23 per share, compared to \$1,919,577, or \$1.45 a share, in the like 1956 period. Philip Ryan, president, blamed higher labor and material costs as well as somewhat lower sales for the drop. First-quarter sales were \$19,415,705, against \$20,092,046 last year. Ryan said the order backlog increased \$750,000 in the first quarter.

Welbilt Corp. reported record first-quarter sales, and higher income from operations than in the same period a year ago. Final net income for the quarter was lower due to special deductions in the 1957 period, while the 1956 three-months reflected special credits. Sales totaled \$5,183,483 compared with \$4,868,791 in the first quarter last year. Net income was \$261,608 in 1957 for the period and \$303,445 the year previous.

(Concluded from Page 1, Col. 4)

Both exhibitors and those attending expressed enthusiasm over the idea of a "Selling Show" that gave the industry a chance to look over new products at a special show.

Attendance was drawn mainly from the southern California area, although there was reasonably good representation from other parts of the state, and a fair registration from Arizona, Nevada, and Oregon.

Exhibitors praised the quality of attendance, and pointed out that among those looking over the exhibits were equipment buyers for some of the largest food and drugstore chains in the Far West.

"The genuine interest of those attending was very high," said one exhibitor. "We didn't have to sift through a lot of curiosity

seekers to find a man who had a real interest in our product."

Other exhibitors voiced the opinion that it was "good to have a show at which we could do some real selling."

Total attendance was estimated by the exposition management to range between 4,000 and 5,000.

Some saw the show as "a good opening wedge for future expanded industry trade shows of this type in the Far West."

The regional conference of the American Society of Heating & Air-Conditioning Engineers, held May 6 and 7, drew exceptionally well, with 300 or more registrations, and this contributed to the quality of attendance at the show. The ASHAE group held two technical sessions, the one on May 6 covering school air conditioning, control of air borne sound

transmission, and filter systems for removing irritants from polluted air.

The second session on May 7 was a symposium on air conditioning of existing buildings, it is noted.

Two technical sessions were also held under the auspices of the exposition management. One on Saturday morning, May 4, was a symposium on "Air Conditioning In Schools." It provided not only discussions, but also photographs of actual and desirable school air conditioning installations. It also revealed a surprising number of installations of summer air conditioning equipment for schools in California.

The second technical session was held on Tuesday night, May 7, and consisted of a diagnostic clinic of refrigeration installations, held under the auspices of the National Association of Practical Refrigerat-

ing Engineers, California Chapter 2.

In this session slides were prepared for a number of refrigeration and accessory installations which have given trouble, and the audience was given the opportunity to analyze the trouble in the light of their experience with this type of problem. This unique approach to a technical discussion of proper application and installation procedures drew an overflow crowd of some 250 people.

To Air Condition Naval Officers Clubs In Japan

DAYTON—U. S. Navy Ship Stores headquarters, New York City, has purchased 47 Airtemp (model 1008-2) 8-ton water-cooled "packaged" air conditioners for shipment to Japan where they will be used to air condition Navy Exchange Officers Clubs.

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EVAPORATIVE CONDENSER CONDITIONED AIR BLOWERS AND HOUSINGS ELECTRICAL CONTROL HEATING AND COOLING COILS MOTOR COMPRESSOR

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The Dunham-Bush 'CPU' unit features patented high efficiency Inner-Fin® cooling coils; slow speed compressors specially selected for quiet operation; and forced-draft, blow-through type Inner-Fin evaporative condenser. Available in 10, 15, 20, 30 and 40 Ton models.

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